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AUTHOR Kauffman, John; And Others
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ABSTRACT

High school and post-high school experiences were compared for 1982, 1985, and 1989 graduates from Lewisburg, Middleburg, Mifflinburg, Selingsgrove, Shikellamy, and West Snyder High Schools, Pennsylvania. These experiences were contrasted by both year of graduation and by program of study: academic, Sun Area Technical School, home school vocational, and general. Information regarding secondary school experiences was collected from high school transcripts. A questionnaire was mailed to graduates to obtain data regarding post-high school work and higher education experiences. The response rate was 40 percent (n=1,271). Findings indicated that the most dramatic change was an increased preference for preparing for and pursuing higher education. This movement was significant for both genders but more so for females. The growth in the academic program of study came at the expense of the vocational education programs but not the general curriculum. Of possible concern was the growing relative participation in the general program, which grew to the second largest program. Due to increased graduation requirements, the total credits earned by all students increased, but students did not necessarily move higher in the curriculum. Seventy-seven percent of respondents noted that career information would have been helpful. Manufacturing dominated employment, although college graduates were more apt to have public service careers. (Six figures and 26 tables are provided.) (YLB)

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A COMPARATIVE ANALYSIS OF 1982, 1985, AND 1989 HIGH SCHOOL GRADUATES IN THE SUN TECHNICAL SCHOOL SERVICE REGION

conducted by

SUN AREA TECHNICAL SCHOOL

John Kauffman, Director
SUN AVTS

Kenneth Gray, Associate Professor
Pennsylvania State University

Neng-Tang Huang, Research Assistant
Pennsylvania State University

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TABLE OF CONTENTS

EXECUTIVE SUMMARY.....I
PURPOSE OF THE STUDY.....I
SCOPE OF STUDY.....I
Findings.....II
I. Secondary School Experiences.....II
A. Distribution by Curriculum.....II
B. The General Curriculum.....II
C. Total Credits Earned.....III
D. Total Vocational Credits Earned.....III
E. Grade Point Averages.....III
F. Mathematics.....III
G. Science.....IV
H. Career Information.....IV
I. Career Choices.....IV
J. Satisfaction with Program of Study.....IV
II. Post-Secondary School Experiences:
Higher Education.....V
A. Mobility.....V
B. Present Status.....V
C. Higher Education Enrollment.....V
D. Type of Institution Attended.....V
III. Post-Secondary School Experiences:
Full-Time Employment.....VI
A. Distribution Among Occupations.....VI
B. Job Seeking Techniques.....VI
C. Firms Size.....VI
D. On the Job Training.....VI
E. Location of Employment.....VII
F. Level of Employment.....VII
G. Seeking employment.....VII
H. Wage Rates.....VII
Purpose of the Research.....1
Scope of the Study.....1
Background to the Study.....2

Research Questions....4
Secondary Experiences....4
Post-Secondary Experiences....5
Methodology....6
Secondary School Experience Data Collection....6
Post-Secondary School Experience Data....7
Data Analysis....8
Data Description....8
Findings/Discussion....9
I. Transcript Data: High School Experiences....9
Distribution by Curriculum....9
Figure 1 Curriculum Distributions by Year of Graduation...10
Figure 2 Enrollment Distributions by Curriculum....11
Figure 3 Curriculum Distributions by Year of Graduation...12
Courses Completed....13
Vocational Courses Completed....13
Grade Point Averages....14
Moving Higher in the Curriculum....14
Figure 4 Highest Math Level by Year of Graduation....16
Figure 4.1 Highest Math Level by Year: Academic Curriculum....17
Figure 4.2 Higest Math Level by Year: General Curriculum....18
Figure 4.3 Highest Math Level by Year: STS Curriculum....19
Figure 4.4 Highest Math Level by Year: HSVOC Curriculum....20
II. Questionnaire Data: High School Experience....21
Need for Career Information....21
Figure 5 Highest Science Level by Year of Graduation....22
Figure 5.1 Highest Science Level by Year: Academic Curriculum....23
Figure 5.2 Highest Science Level by Year: General Curriculum....24
Figure 5.3 Highest Science Level by Year: STS Curriculum....25

Figure 5.4 Highest Science Level by Year HSVOC Curriculum....26
Those Influencing Post-Secondary Plans....27
Satisfaction with High School Preparation....27
III. Questionnaire Data: Post-Secondary Experiences....28
Mobility....28
Present Status....28
IV. Questionnaire Data: Higher Education Experience....29
Type of Institution Attended....29
Status in Program....30
V. Questionnaire Data: Full-Time Employment....30
Distribution by Industry Type....30
Job Seeking Techniques....31
Size of Employer....31
On the Job Training....31
Commuting Distance....32
Level of Employment....32
Job Satisfaction....32
VI. Questionnaire Data: Wage Rates....32
Figure 6 The Interaction of Curriculum Type and Year of Graduation: Weekly Wage....34
SUMMARY....35
References....38
Table 1 Frequency Distributions of Transcript and Questionnaire Data.... 39
Table 2 Gender Distributions by Curriculum Type and Year of Graduation.... 40
Table 2.1 Distribution of Handicapped Student by Curriculum Type..... 41
Table 3 Total Credits by Curriculum Type and Year of Graduation.... 42
Table 4 Total Vocational Credits by Curriculum Type and Year of Graduation.... 43
Table 4.1 Total Vocational Credits by Year of Graduation 44
Table 4.2 Total Vocational Credits by Curriculum Type: Year of 1982.... 45
Table 4.3 Total Vocational Credits by Curriculum Type: Year of 1985.... 46

Table 4.4	Total Vocational Credits by Curriculum Type: Year of 1989	47
Table 5	Grade Point Average by Curriculum Type and Year of Graduation	48
Table 6	Total Math Credits by Curriculum Type and Year of Graduation	49
Table 6.1	Highest Math Level by Curriculum Type: Year of 1982	50
Table 6.2	Highest Math Level by Curriculum Type: Year of 1985	51
Table 6.3	Highest Math Level by Curriculum Type: Year of 1989	52
Table 7	Total Science Credits by Curriculum Type and Year of Graduation	53
Table 7.1	Highest Science Level by Curriculum Type: Year of 1982	54
Table 7.2	Highest Science Level by Curriculum Type: Year of 1985	55
Table 7.3	Highest Science Level by Curriculum Type: Year of 1989	56
Table 8	The Need for Career Information by Curriculum Type, Gender, and Year of Graduation	57
Table 9	The Most Helpful Timing for Career Information by Curriculum Type	58
Table 10	The Most Influential Person in Decision Making for Postsecondary Activities by Curriculum Type	59
Table 11	Satisfaction with High School Program by Curriculum Type	60
Table 12	Opinion Toward Repeating High School in a Different Curriculum by Curriculum Type	61
Table 13	The High School Curriculum to be Repeated by Curriculum Type	62
Table 14	Mobility Status by Curriculum Type	63
Table 14.1	Mobility Status by Curriculum Type: Year of 1982	64
Table 15	Current Status by Curriculum Type: Year of 1982	65
Table 15.1	Current Status by Curriculum Type: Year of 1985	66
Table 15.2	Current Status by Curriculum Type: Year of 1989	67
Table 16	Postsecondary Education Attendance by Curriculum Type and Year of Graduation	68
Table 16.1	Type of Postsecondary Education Attained by Curriculum Type: Year of 1982	69
Table 16.2	Type of Postsecondary Education Attained by Curriculum Type: Year of 1985	70

Table 16.3 Type of Postsecondary Education Attained by Curriculum Type: Year of 1989 71
Table 16.4 Location of Postsecondary Institution by Curriculum Type 72
Table 17 Job Distributions by Industry Sector and Year of Graduation 73
Table 17.1 Job Distributions by Industry Sector and Curriculum Type: Year of 1982 74
Table 17.2 Job Distributions by Industry Sector and Curriculum Type: Year of 1985 75
Table 17.3 Job Distributions by Industry Sector and Curriculum Type: Year of 1989 76
Table 18 Job Seeking Technique by Year of Graduation 77
Table 19 Firm Size by Year of Graduation 78
Table 19.1 Firm Size by Curriculum Type: Year of 1982 79
Table 19.2 Firm Size by Curriculum Type: Year of 1985 80
Table 19.3 Firm Size by Curriculum Type: Year of 1989 81
Table 20 Type of On-the-job Training by Year of Graduation 82
Table 20.1 Type of On-the-job Training by Firm Size 83
Table 20.2 Type of Training by Industrial Sector 84
Table 21 Commuting Distance by Year of Graduation 85
Table 22 Level of Employment by Curriculum Type 86
Table 23 Level of Employment by Year of Graduation 87
Table 24 Job Satisfaction by year of Graduation 88
Table 25 ANOVA Summary Table: Mean Weekly Wage by Curriculum Type and Year of Graduation 89
Table 25.1 Weekly Wage by Curriculum Type and Post-Secondary Education Attendance 90
Table 25.2 Weekly Wage by Curriculum Type and Post-Secondary Education Attendance: Year of 1982 91
Table 26 Regression of the Weekly Earning for the Full-time Working 92

EXECUTIVE SUMMARY

A COMPARATIVE ANALYSIS OF 1982, 1985, AND 1989 HIGH SCHOOL GRADUATES IN THE SUN TECHNICAL SCHOOL SERVICE REGION

PURPOSE OF THE STUDY: The purpose of this study was to provide high school curriculum planning and evaluation data. The study compared the high school and post-high school experiences of individuals who graduated in 1982, 1985, and 1989. These experiences were contrasted by both year of graduation and by program of study: academic (ACA), Sun Area Tech School (SATS), home school vocational (HSVOC) and General (GEN). The period studied covered a time of unprecedented change in high schools including implementation of increasing graduation requirements and declining secondary school enrollments. Thus the study provides a unique opportunity to examine the impact of these and other developments.

SCOPE OF STUDY: The study included all 1982, 1985, and 1989 graduates from Lewisburg, Middleburg, Mifflinburg, Selingsgrove, Shikellamy and West Snyder High Schools (n=3137). Information regarding secondary school experiences of the graduates was collected from high school transcripts by guidance counselors in the six high schools. A questionnaire was mailed to all graduates in order to obtain data regarding post-high school work and higher education experiences. Forty percent of the questionnaires were returned (n=1271).

Findings

I. Secondary School Experiences:

A. Distribution by Curriculum (see figures 1, 2 & 3): Between 1982 and 1989 the percentages of graduates who completed the ACA curriculum increased 13.5% while the percentages completing all other programs of study declined. The increase preference for the academic (ACA) curriculum was most pronounced for girls (+15%). While fewer girls completed all other curriculum, home school vocational education (HSVOC) showed the biggest loss in female enrollment. The loss in SATS enrollment occurred between 1985 and 1989.

B. The General Curriculum (see figures 1, 2 & 3): One fifth of all students in the region failed to complete either the academic or a vocational education program and thus by default were general students. In 1989 the general curriculum displaced SATS as the second largest curriculum group graduating. Forty percent (40%) of all general students did not take any vocational education credits while another 48% took some vocational education but failed to complete the six credits necessary for an approved vocational education program. Handicapped students most often completed the general (GEN) program (43%) followed by the Sun Area Technical School (SATS) program (32%).

C. Total Credits Earned (see table 3): Reflecting an increase in state mandated graduation requirements, total credits earned increased between 1982 and 1989. Students in all curriculum groups, on the average, earned in excess of the state 21 credit minimum. Within the four curriculum groups, SATS students showed the greatest increase in credits earned. Students completing the general curriculum earned the least number of credits and were earning virtually the same total in 1989 as in 1982.

D. Total Vocational Credits Earned (see table 4.4): A majority of all students take some vocational education; 64% of all 1989 graduates took one or more credits of vocational education. This average is, however, down from 1982 when 76% took one or more vocational education courses. Reflecting the demands of the new graduation requirements the number of vocational education courses taken even by vocational education students decreased.

E. Grade Point Averages (see table 5): Grade point averages increased slightly between 1982 and 1989. The largest increase was for SATS students. ACA students had the highest GPA's, followed by SATS, HSVOC, and GEN.

F. Mathematics (see table 6.3): The average number of math credits completed by students in all 4 curriculum types increased between 1982 and 1989. While there was improvement in the level of math completed, it is attributed mostly to the 13% movement of students into the ACA curriculum. Analysis of students within the SATS, and HSVOC separately indicates (see figures 4 - 4.4) that the majority of vocational students are still not progressing beyond the level of general math.

G. Science (see table 7.3): The average number of science credits completed increased only slightly between 1982 and 1989. This increase was the most noted for SATS and HSVOC students. Science credits taken by academic students remained virtually unchanged at a little less than 4 courses. As was the case with math, there was some improvement in the highest level of science completed but it is attributed mostly to increased numbers in the academic curriculum and greater percentages of this group taking science through college physics. However, (see figures 5-5.4) when we look only at SATS and HSVOC we find that the percentages of students that are not going beyond general biology shows only slight improvement.

H. Career Information:(see table 8) Respondents overwhelmingly indicated that they would have benefitted from career information while in the public schools and that this information would have been the most useful in the 8th and 10th grades.

I. Career Choices:(see table 9) Overwhelmingly, respondents indicated that parents were the most important influencers of student's decisions about post secondary pursuits. Influence by school personnel was somewhat insignificant.

J. Satisfaction with Program of Study:(see table 11) Ninety percent of respondents from all curricula indicated being at least somewhat satisfied with their high school program of study. Twenty-five percent of all respondent indicated they would change the program they took in high school. Almost half of the general students so indicated while only 10% of academic students reported they would take a different course. Academic and general students most often indicated they would take the SATS curriculum, conversely SATS students reported they would take the academic course.

II. Post-Secondary School Experiences: Higher Education

A. Mobility: (see tables 14 & 14.1) Of those who responded to the survey, 74% still lived within the county; 54% still lived at home. Seventy percent were unmarried.

B. Present Status (see tables15 - 15.2). Full-time employment was the most common status of respondents from the classes of 1982 and 1985. Full-time student was the most common status of the class of 1989 (56%). Sixty-four percent of SATS graduates and 46% of HSVOC from the class of 1989 were working full-time while 23% of SATS and 35% of HSVOC were full-time students. Almost half of all students who were attending higher education were also working part-time.

C. Higher Education Enrollment: Sixty-one percent (see tables 16 & 16.4)) of all respondents had attended some higher education. Ninety percent of all ACA graduates had attended followed by 51% of GEN students, 32% of SATS and 43% of HSVOC. Consistently over the period, 80% or more of students attended higher education in state. Seventy-seven percent of the class of 1982 that attended higher education indicated they had completed the program.

D. Type of Institution Attended (see tables 16.1 - 16.3): Over the period increased number of students attend 4 year colleges and fewer attended community colleges and technical schools. Graduates of the SATS and HSVOC are the most likely to attend 2 year institutions.

III. Post-Secondary School Experiences: Full-Time Employment

A. Distribution Among Occupations: (see tables 17 - 17.3). Manufacturing dominates employment in the region: 32% of all respondents who were working full-time worked in manufacturing. The importance of other occupational groups changes as graduates get older. Food service is an important employer, for example, of recent high school graduates, where as construction is an important employer of older graduates as was government.

B. Job Seeking Techniques: (see table 18) Friends and relatives were the most common source of assistance in obtaining jobs followed by students calling directly on employers. School personnel played an insignificant role with the exception of cooperative education teachers.

C. Firms Size: (see tables 19 - 19.4) Fifty-seven percent of respondents from the class of 1989 work in firms of less than one hundred individuals, 33% in firms of less than 20 employees. Recent high school graduates are more likely than older graduates to work for small firms. Graduates of the academic curriculum are the most likely to work in the largest firms while graduates of the HSVOC are the most likely to work in the smallest.

D. On the Job Training: (see tables 20 - 20.2) Only 25% of all respondents reported receiving any formal training. Older graduates were more likely to have gotten formal training as were those working in large firms. Forty-seven percent of the class of 1989 who were working full-time received no training.

E. Location of Employment: (see table 21) Forty percent of the respondents live within five miles of work. Only 11% travel more than twenty miles.

F. Level of Employment: (see tables 22 & 23) Seven percent of respondents indicated they were self-employed. This group was almost entirely graduates of the STS curriculum. Graduates of the ACA curriculum were the most likely to be supervisors and managers.

G. Seeking employment: (table 24) The unemployment rates for respondents was quite low. However, 24% of those employed full-time were seeking other employment.

H. Wage Rates: (see tables 25 & 26) Graduates of the ACA program earned more than other curriculum. This advantage, however, was gained solely from attending higher education. Academic students who did not go on to higher education earned less than any other curriculum group accept GEN. Wage rates were significantly effected by being male, married, finish college, working in large firms and living in an urban area.

A COMPARATIVE ANALYSIS OF 1982, 1985, AND 1989 HIGH SCHOOL GRADUATES IN THE SUN TECHNICAL SCHOOL SERVICE REGION

The following research project was conducted in response to a request for proposals (RFP) from the Pennsylvania Department of Education, Bureau of Vocational and Adult Education. The grantee was the Sun Area Technical School located in New Berlin, Pennsylvania, 40 miles west of Harrisburg the state capital. Technical expertise and data analysis were provided under contract by the Pennsylvania State University, College of Education's Division of Vocational and Technical Education.

Purpose of the Research

The purpose of this research was to provide high school curriculum planning and evaluation data. A second purpose was to develop a data gathering procedure that could be replicated in other area vocational-technical school service areas. The study compared the high school and post-high school experiences of individuals who graduated in 1982, 1985, and 1989. These experiences were contrasted by both year of graduation and by program of study: Academic (ACA), Sun Area Tech School (SATS), Home School Vocational (HSVOC) and General (GEN).

Scope of the Study

The study included all 1982, 1985, and 1989 graduates from Lewisburg, Middleburg, Mifflinburg, Selingsgrove, Shikellamy and West Snyder High Schools (n=3137). Information regarding secondary school experiences of

the graduates was collected from high school transcripts by guidance counselors in the six high schools. A questionnaire was mailed to all graduates in order to obtain data regarding post-high school work and higher education experiences. Forty percent of the questionnaires were returned (n=1271).

Background to the Study

Between 1982 and 1989 significant demographic and regulatory changes have effected the secondary high school in Pennsylvania. Mirroring the national trend, Pennsylvania high school enrollments decreased during the period. Between 1982 and 1989 the numbers of public high school graduates declined by 17% (PDE, 1989). In 1984 Pennsylvania increased the minimum number of credits needed to graduate to 21. It also stipulated that as part of the 21 credit requirement students must complete four courses in English, three in science, three in math and three in social studies making it one of the most demanding in the nation. The objectives of this reform was to increase the total number of courses students took in high school and, by so doing, to insure that students moved higher in the curriculum by taking more advanced courses. The reform also was accompanied by a strong "go to college" message with the objective of improving the state's percentages of students going on to higher education which, at that time, was among the lowest in the country.

During the same period, enrollments in vocational education programs declined dramatically across the state. Between the 1984-85 and 1988-89 school year enrollment in approved vocational education programs decreased a dramatic 37.8%. Because this decline began at about the same

time as increased graduation requirements were implemented, it is speculated that one led to the other. Specifically it is often suggested that students find it impossible to get all the required courses and still take the six credits of vocational education required in the junior and senior year; thus they either drop the programs or do not enroll in the first place. One purpose of this research was to assess the impact of increased graduation requirements and declining enrollments on vocational education programs by examining the high school transcripts of all graduates of 1982 who were uneffected by the reform measures with those of 1985 and 1989 who had to comply with some or all of them.

One important goal of secondary education is to prepare students to make the transition from high school to full-time employment, higher education, the military, etc. Thus effectiveness of students in making this transition and the types of activities they pursue after high school becomes an important planning and evaluation variable for the various curricular offerings: specifically Academic (ACA), General (GEN), Sun Area Technical School (SATS) and vocational programs such as business education offered within the comprehensive high schools (HSVOC). A second purpose of this research was to provide this type of data by surveying a class that had recently graduated (1989), a class that had graduated five years ago (1985) and eight years ago (1982). A specific objective was to contrast these experiences by curriculum type in order to evaluate the relative effectiveness of each curriculum type.

Research Questions

Secondary Experiences: During the period studied.

1. Did the distribution of graduates by curriculum type change?

2. Did total credits earned increase and were there differences between curriculum types?

3. Did grade point averages (GPA) increase and were there differences between curriculum types?

4. Did total vocational education credits earned increase and were there differences between curriculum types?

5. Did total math credits earned increase, did students move higher in the math curriculum and were there differences between curriculum types?

6. Did total science credits earned increase, did students move higher in the science curriculum and were there differences between curriculum types?

7. Would career information have been of help to graduates, and if so, at what level would it have been the most effective?

8. Who are the most significant individuals influencing the high school course selection and higher education choices?

9. Are graduates satisfied with their high school education?

Post-Secondary Experiences:

1. How geographically mobile are graduates and were there differences between curriculum types?

2. What is the present status of graduates and were there differences between curriculum types?

3. What percentage of graduates have attended institutions of higher education, what type of institutions did they attend, where were they located, did they complete the program and were there differences between curriculum types?

4. What is the distribution of graduates among eight occupational groups and were there differences between curriculum types?

5. What job seeking techniques are most common employed and were there differences between curriculum types?

6. What was the distribution of graduates among firms of various sizes and were there differences between curriculum types?

7. How much and what type of employer provided training did graduates receive and were there differences between curriculum types?

8. What level of employment (self employed, manager, employees) did graduates have and were there differences between curriculum types?

9. What were the weekly earnings of graduates and were there differences between curriculum types?

10. Are graduates working within the region?

11. How many graduates who are currently employed are also looking for different work?

Methodology

The total population for the study consisted of all high school graduates for the years of 1982, 1985 and 1989 from the school districts of Lewisburg, Middleburg, Mifflinburg, Selingsgrove, Shikellamy, and West Synder who participate in the Sun Area Technical School (SATS). Data was gathered for the entire population (n=3144). The population was 51% male and less than one percent minority students. The largest high school, Shikellamy comprised 28% (n=892) percent of the sample, followed by Selingsgrove at 19% (n=607), Mifflinburg at 16% (n=506), Lewisburg at 15% (n=477, Middleburg at 12% (n=372) and West Snyder at 9% (n=283). The population distribution by year of graduation was: 1982 = 35.6% (n=1118), 1985 = 33.1% (n=1039), 1989 = 31.2% (n=980). The population distribution by high school curriculum type was: ACA = 37% (n=1156), GEN = 21% (n=673), SATS = 25% (n=787), HSVOC = 17% (n=521).

Secondary School Experience Data Collection: Information about the high school records of the population was collected from permanent record transcripts by guidance counselors from each of the six high schools. The counselors were trained for the encoding by the project research staff. Data was collected for the following variables: last known address, GPA, total credits earned, total vocational credits earned, total math credits earned, highest level of math completed, total science credits earned, highest level of science completed, and curriculum of concentration. Because math and science courses did not match exactly in all high schools, some offering for

example a pre-algebra course, etc. all courses were converted to a common sequence. The math sequence consisted of six levels beginning with general math. All math courses that were below the level of algebra I were encoded as general math. Science courses were converted to a four course sequence. The basic level was a combination of general science and biology as most all students take biology to meet state health requirements making it in effect the curriculum floor.

A research objective of this study was to compare the experiences of students who completed different programs of study in high school. Accurately identifying the program of study completed by those in the study population was therefore important. For this reason guidance counselors from each of the participating high schools were employed by the projects to examine each of the transcripts and assigned to each student to one of four programs of study: Academic (ACA), General (GEN), Sun Area Technical School (SATS) or Home School Vocational (HSVOC). To be assigned to one of the two types of vocational education programs a student must have completed an approved course sequence of six credits. Counselors assigned students to the ACA if they had completed three or more years of college math and science and a foreign language. A course was counted as a vocational credit for the purpose of collecting total vocational credits data if it was taught by a teacher with a vocational certificate.

Post-Secondary School Experience Data: Information about the post-secondary school experiences of those in the study population were collected by a questionnaire mailed to the last known address. The questionnaire form was developed by the research team. Input regarding the types of information to collect was obtained by a work session hosted by SATS

for local school officials and community groups. The instrument was field tested using adults enrolled at Sun Area Technical School.

A questionnaire was mailed to each of the 3137 individuals in the sample. A 40.4% response rate was obtained (see table 1). The response rate by year of graduation was 1982 = 34% (n=382), 1985 = 40.7% (n=423), 1989 = 47.4% (n=466); 38% of the males in the population and 44% of females responded to the questionnaire. Graduates who completed the academic (46%) and SATS (44%) curriculum were the most likely to respond to the questionnaire; only 28% of general students responded. These response rates resulted from several strategies including a cover letter that was customized for each of the six high schools, a lottery prize drawing for respondents, and a second questionnaire sent to non-respondents. The distribution of respondents by year of graduation varied from the population by 5% and 4% by gender (see table 1).

Data Analysis: A two file data base was created and merged using CMS/SAS run on the Pennsylvania State University main frame. Depending on the nature of the data, null hypothesis were tested for significance using chi-square, ANOVA, and multiple-regression. Inferential statistics were not needed for the analysis of transcript data because the entire population was studied.

Data Description: Table 1 provides a description of the data and a comparison of the entire population with those who responded to the questionnaire. The number of high school graduates in the region studied declined by 12%, less than the 18% declined statewide. Only 3.2 percent of the population were identified by counselors as handicapped.

Findings/Discussion

I. Transcript Data: High School Experiences

Distribution by Curriculum (see figures 1-3 & table 2):

During the period studied there was a marked shift in the percentage of graduates who completed the academic course of study. Correspondingly, the percentage of students completing all other curricula decreased. The SATS curriculum showed the greatest decrease. Interestingly the percentage of students completing the SATS program was constant between 1982 and 1985 but fell 7.5% after 1985. The opposite was noted for HSVOC which lost 3% between 1982 and 1985 but remained at 15.5% through 1989. The late and sudden drop in SATS enrollment is undoubtedly because the programs enroll only seniors.

Another trend and possibly a troubling one, is the large number of students who complete only the general course of study. In total percentages the GEN curriculum showed the smallest decrease between 1982 and 1989. As a result in 1989 the general curriculum was the second most often completed program of study (20.5%) replacing SATS (19.8%).

Forty-one percent of all males and 48% of all females in the class of 1989 completed the ACA program. The increasing preference for the ACA curriculum between 1982 and 1989 was noted for both genders but most noted for girls which increased 15%. Correspondingly, female HSVOC showed a 7% decrease, SATS a 4.5 decrease and GEN a 3.5% decrease. Meanwhile the increase preference of males came almost entirely at the

Figure 1 *Curriculum Distributions by Year of Graduation*

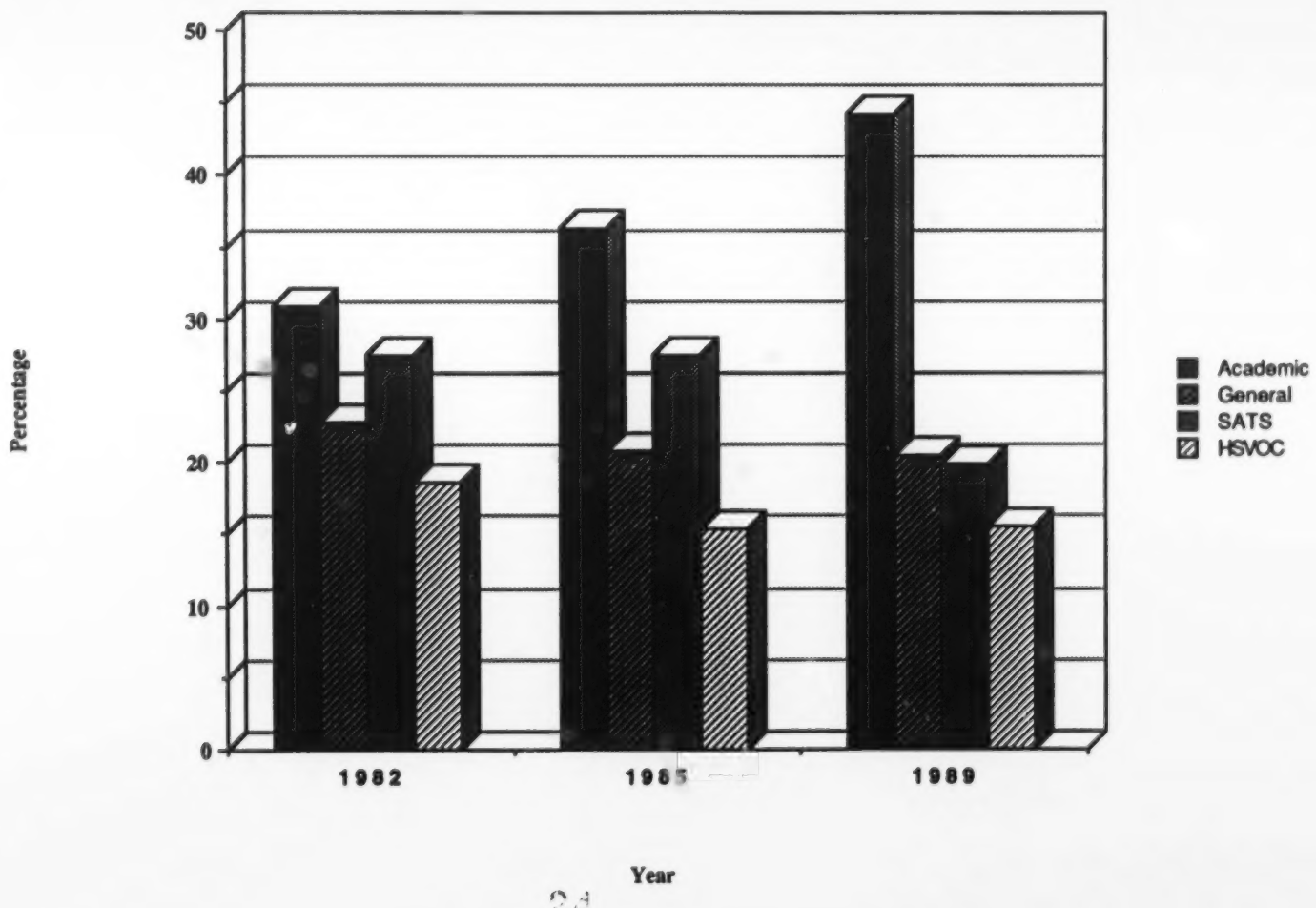


Figure 2 *Enrollment Distributions by Curriculum Type*

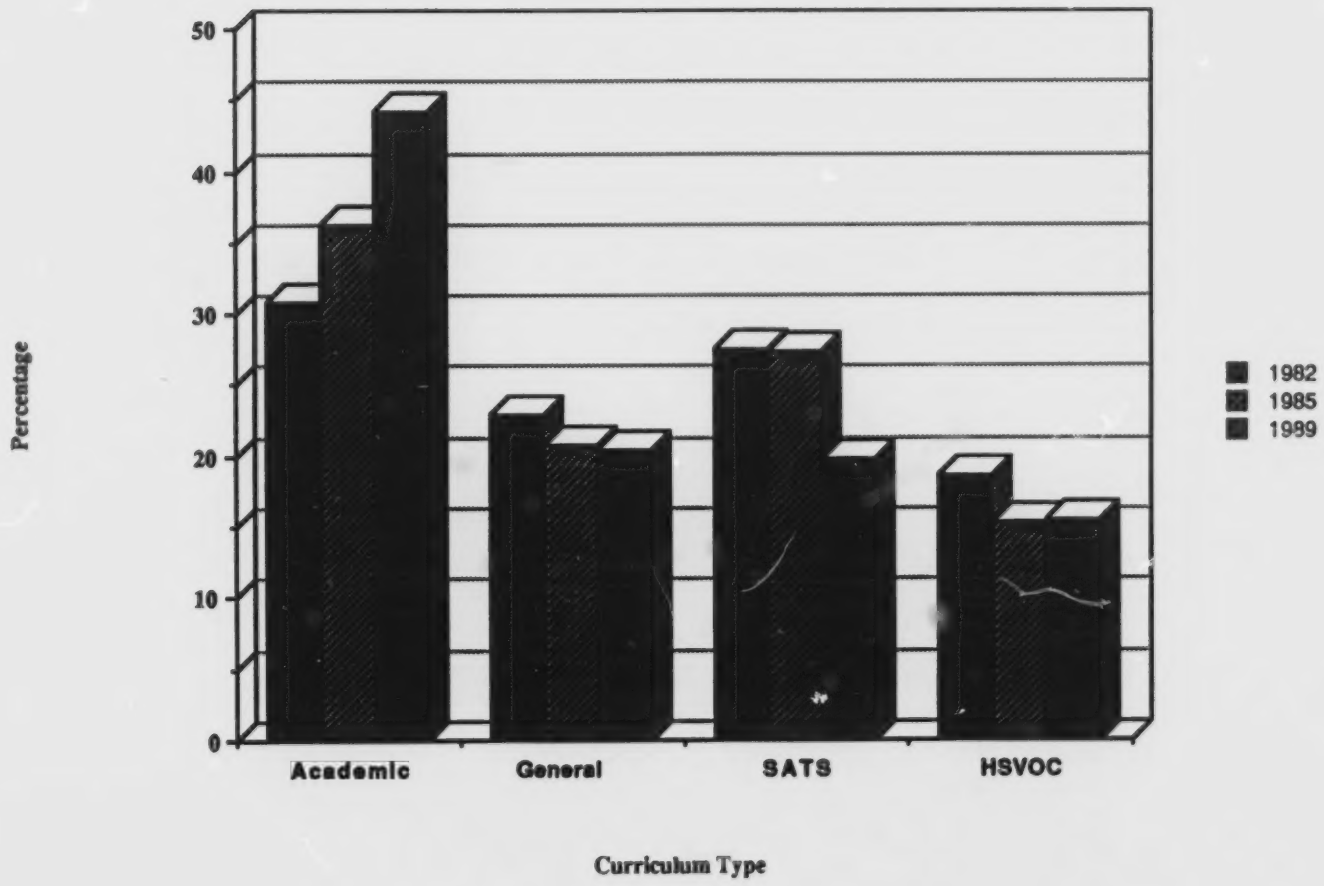
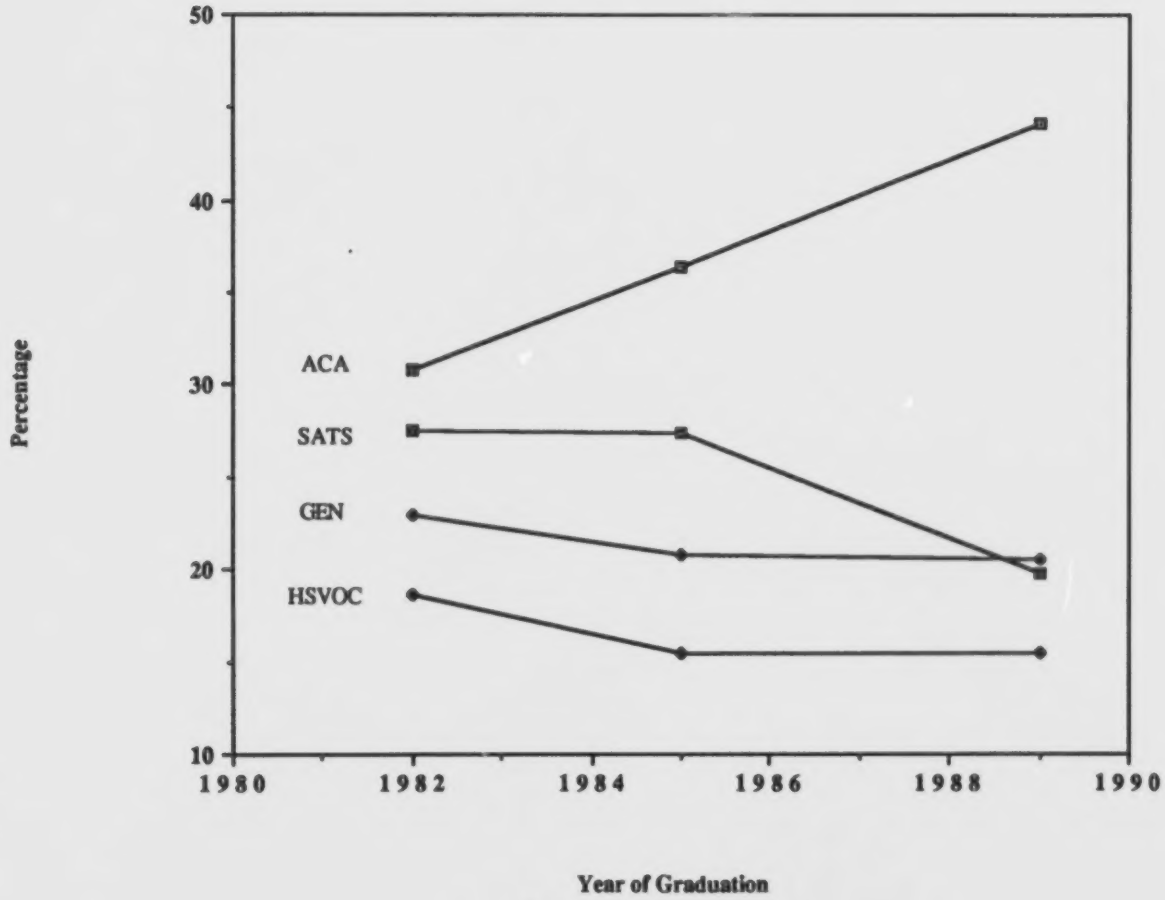


Figure 3 *Curriculum Distributions by Year of Graduation*



expense of the SATS curriculum, though it should be noted that this research design does not allow the conclusion that boys who used to take the SATS program are now taking the ACA course.

The changing distribution of students among curriculum types is the fundamental finding of this study; one which must be remembered when interpreting other findings. While significant attention has been given to the impact of increased graduation requirements, less attention is typically played to the "go to college" rehotoric that accompanied it. Yet this research would suggest that the most glaring differences between 1982 and 1989 graduates is the increased preferences for the ACA typically taken in order to prepare for higher education.

Courses Completed (see table 3): A research objective of this study was to assess the impact of increased graduation requirements. As predicted given the increased requirements, average total credits earned by all students in all four curricular groups increased between 1982 and 1989. This increase was the greatest for SATS students who earned on the average more credits than any other curriculum except ACA in 1989. The increase was the least for GEN students who earned on the average fewer credits than any other curriculum group. On the average, students in all curricula were earning more credits than the 21 minimum required by the state. All increases noted came between 1985 and 1989 suggesting that the increased graduation requirements was the driving force behind students taking more courses.

Vocational Courses Completed (see tables 4 - 4.4). Reflecting the movement of students into the ACA curriculum, average total vocational education

credits taken by all students declined between 1982 and 1989. The percentage of students who took less than one vocational education credit increased from 24% in 1982 to 35% in 1989. Interestingly 40% of all general students did not take any vocational education in 1989. At the same time another 48% of general students took up to four vocational education courses but did not take the additional two necessary to complete an approved program leading to speculation that students may begin vocational education programs but do not complete the six credit course of study because of the 21 credit graduation requirement. There is also strong evidence that increased graduation requirements have resulted in even vocational education students taking less vocational education; in 1989, for example 12% less HSVOC students than in 1982 were able to compile more than six vocational education credits.

Grade Point Averages: (see table 5) Grade point averages (GPA) increased for ACA and SATS students between 1982 and 1989 and declined for GEN and HSVOC students. The largest increase was for the SATS students. In rank order ACA students have the highest GPA approaching a B, followed by SATS and HSVOC at C+ and then GEN with a C. It is interesting to note that the two curricula that showed the greatest increase in credits completed, ACA and SATS, also showed the greatest GPA increase.

Moving Higher in the Curriculum: The intent of increasing the number of credits required to graduate by the state of Pennsylvania was both to raise the total number of courses students completed and to promote students taking higher level courses within content areas by increasing specific requirements in such areas as math and science. This study attempted to

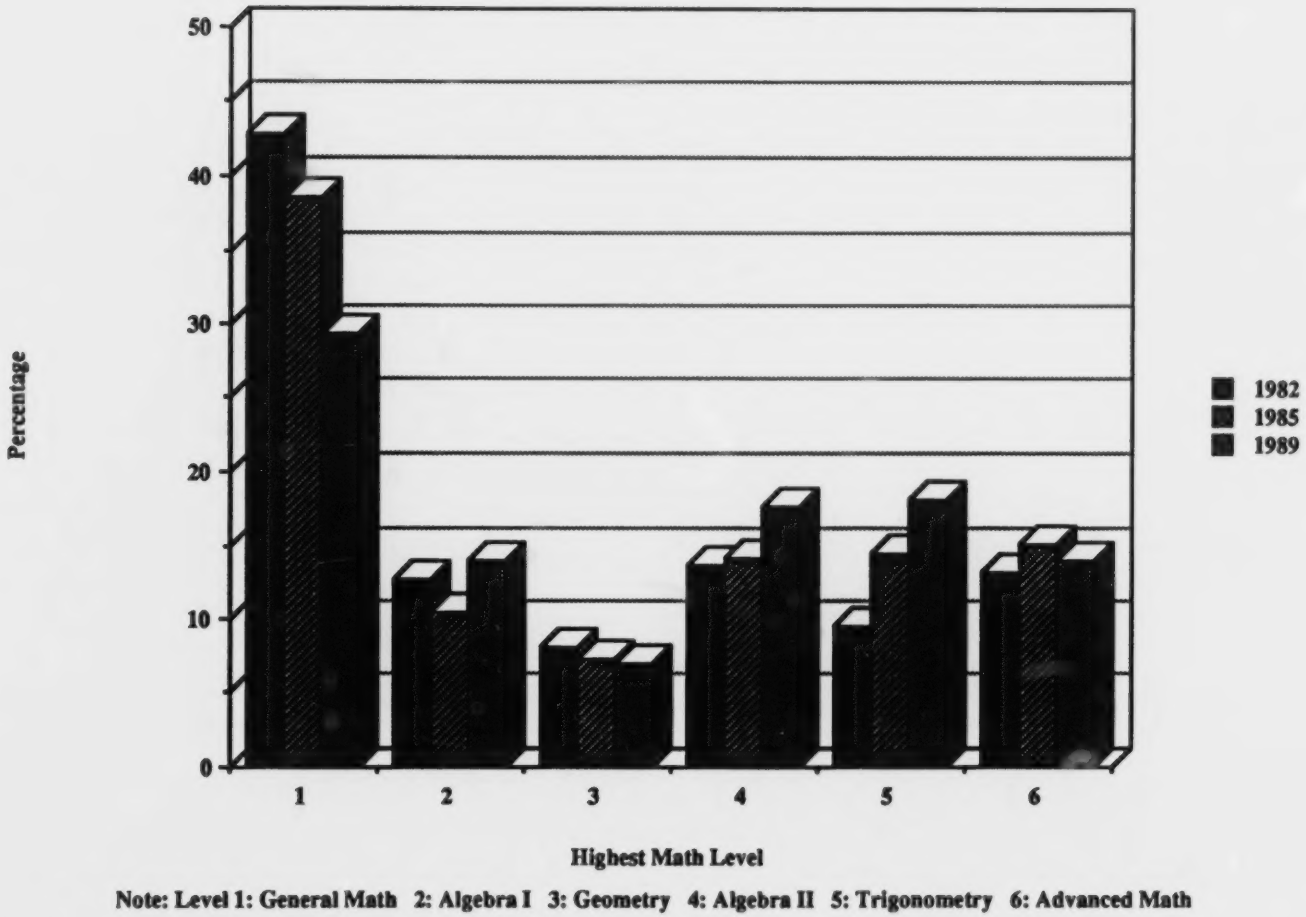
assess the success of these objectives in the content areas of math and science.

1. Mathematics: (see figures 4-4.4 and tables 6-6.3) Reflecting the new state graduation requirement of 3 math credits, total math credits earned by students in all curriculum groups increased between 1982 and 1985. The increase was the smallest for ACA students a majority of whom were already taking more than three math courses in 1982. Academic students, however, completed the most math courses earning on the average four credits. Meanwhile SATS and HSVOC students who in 1982 typically took two math courses now are taking three.

As illustrated by figure 4, there was some movement of students higher in the mathematics curriculum. In 1982, 42% of all students did not progress beyond general math; by 1989 this percentage had declined to 29%. Likewise, the percentage of all students who took math through trigonometry doubled to 18%. This movement masks a more fundamental problem however.

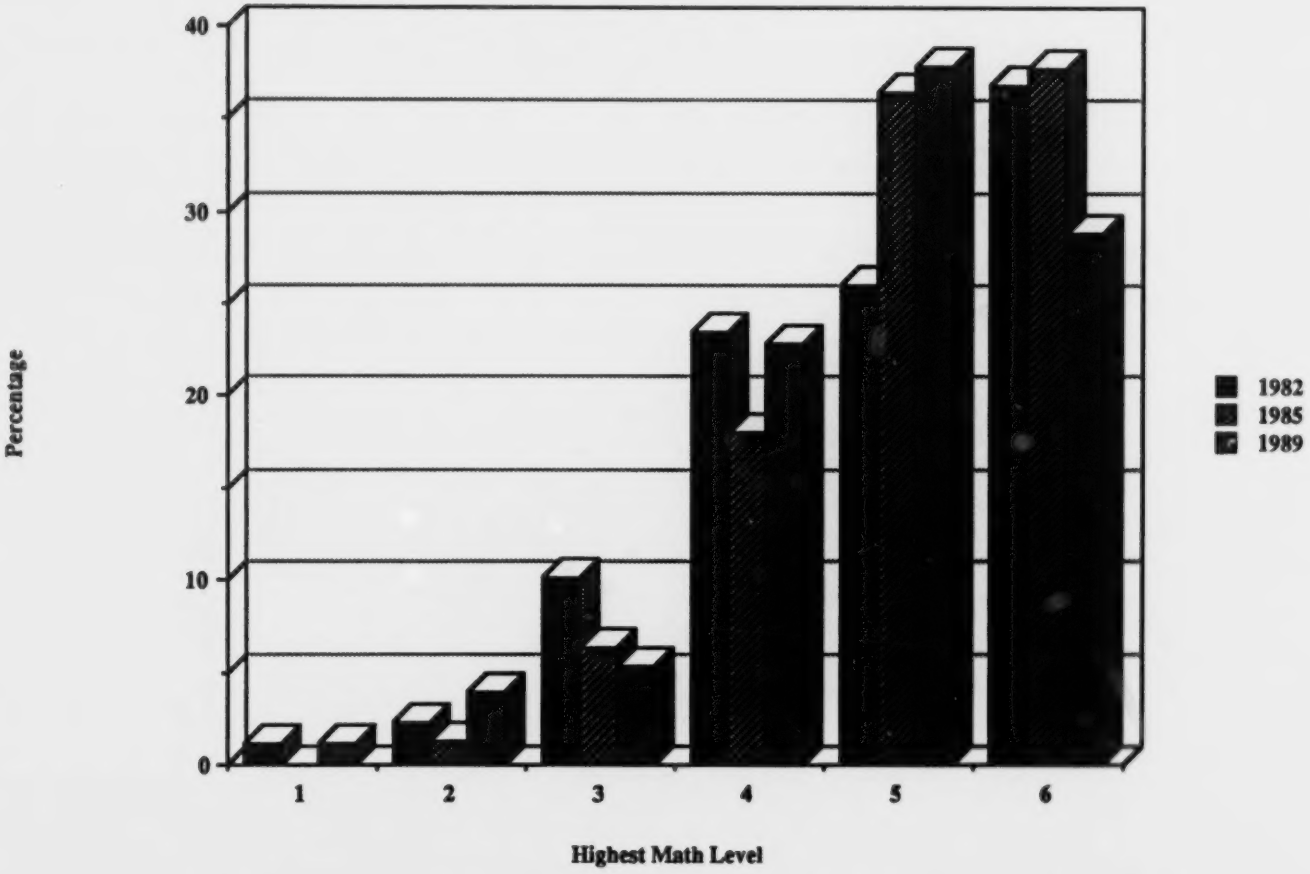
To a great extent the movement of students higher in the math curriculum is attributed to the overall 13% increase in students taking the ACA program of study and higher percentages of these students taking four years of college math than in the past (see figure 4.1). When one looks at students in the other curriculum types, a less rosey picture emerges; 35% of all GEN, 62% of all SATS and 60% of all HSVOC graduates in 1989 had not progressed beyond general math. (see figure 4.4 & table 6.3).

Figure 4 *Highest Math Level by Year of Graduation*



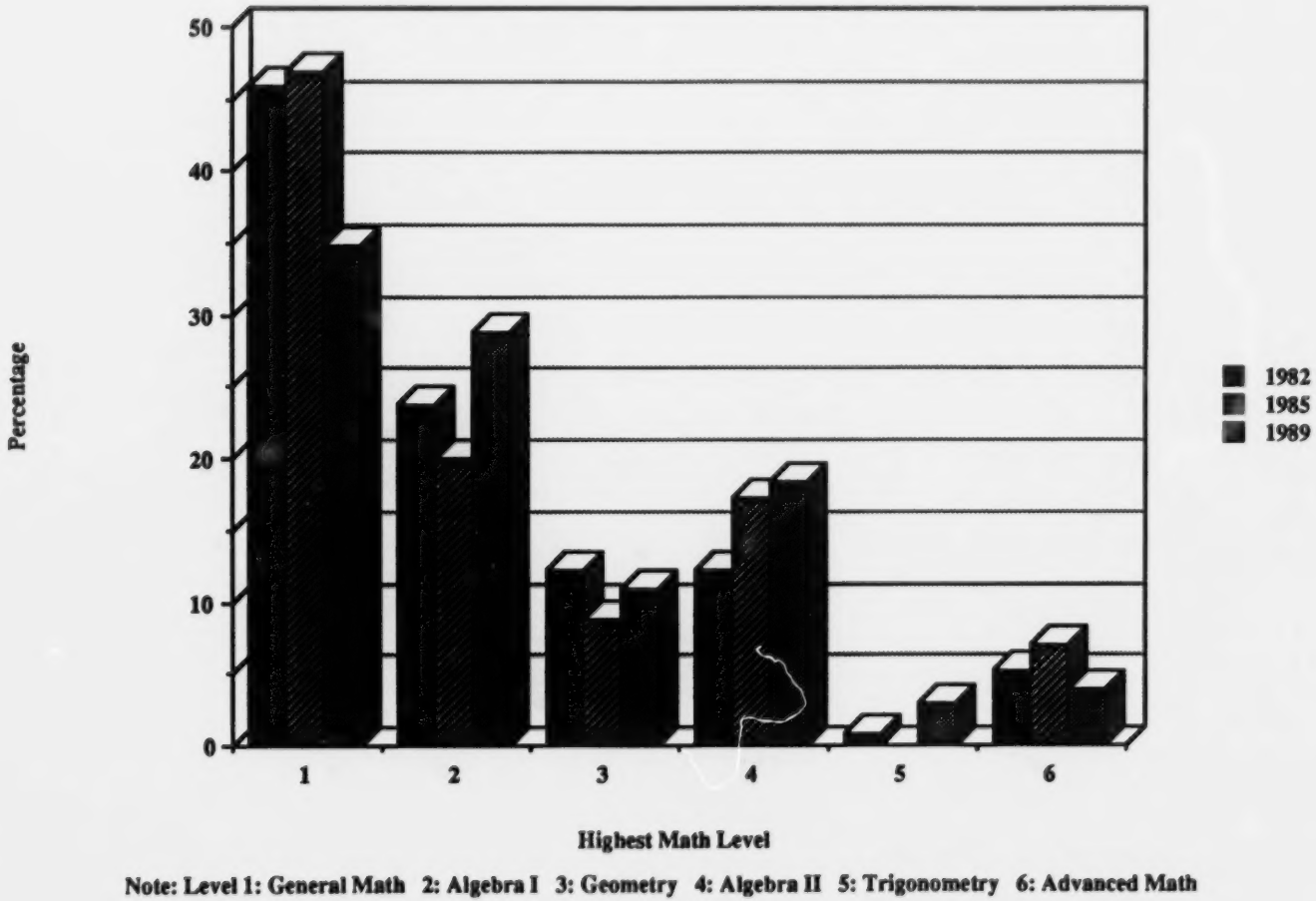
Note: Level 1: General Math 2: Algebra I 3: Geometry 4: Algebra II 5: Trigonometry 6: Advanced Math

Figure 4.1 *Highest Math Level by Year: Academic Curriculum*



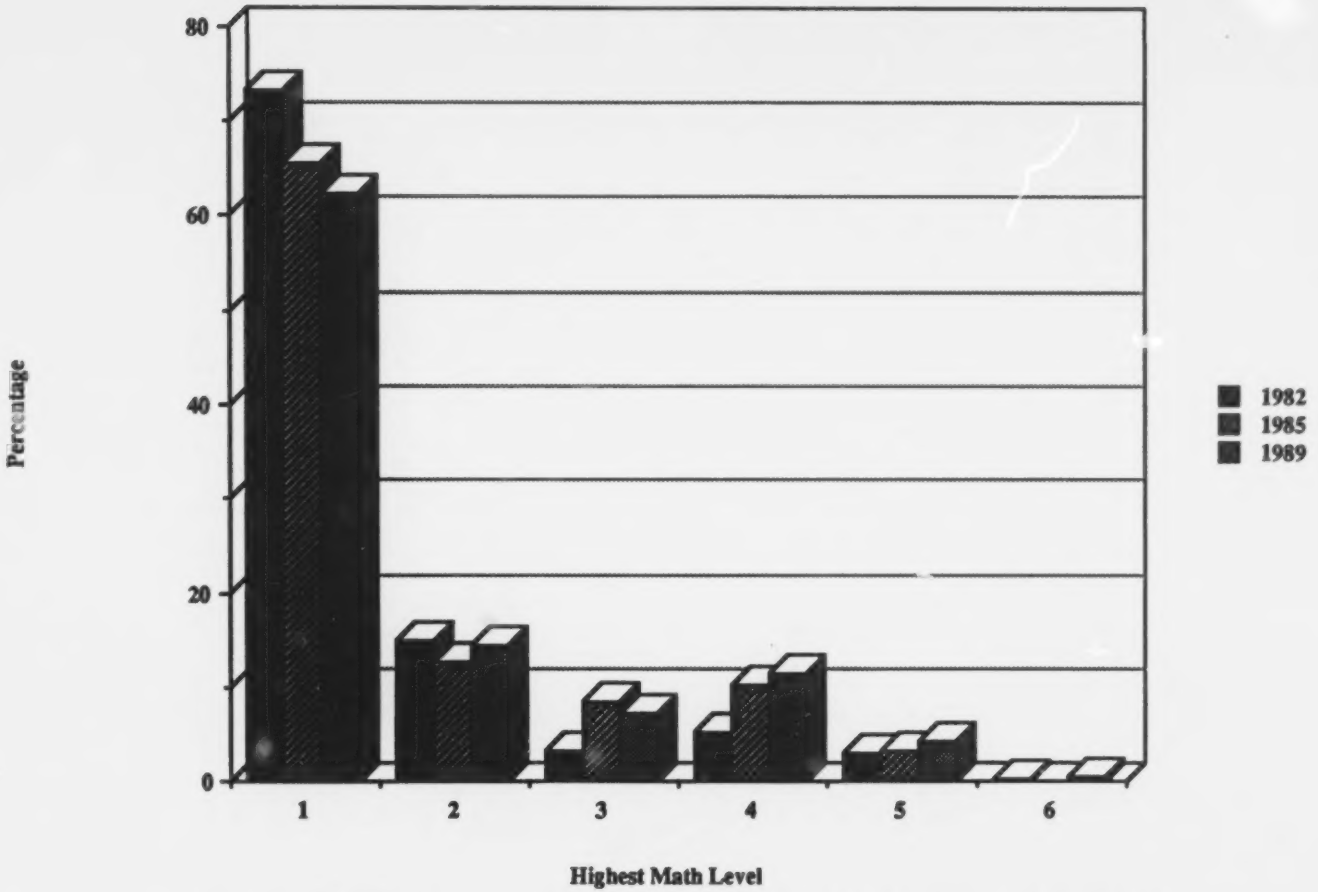
Note: Level 1: General Math 2: Algebra I 3: Geometry 4: Algebra II 5: Trigonometry 6: Advanced Math

Figure 4.2 ***Highest Math Level by Year: General Curriculum***



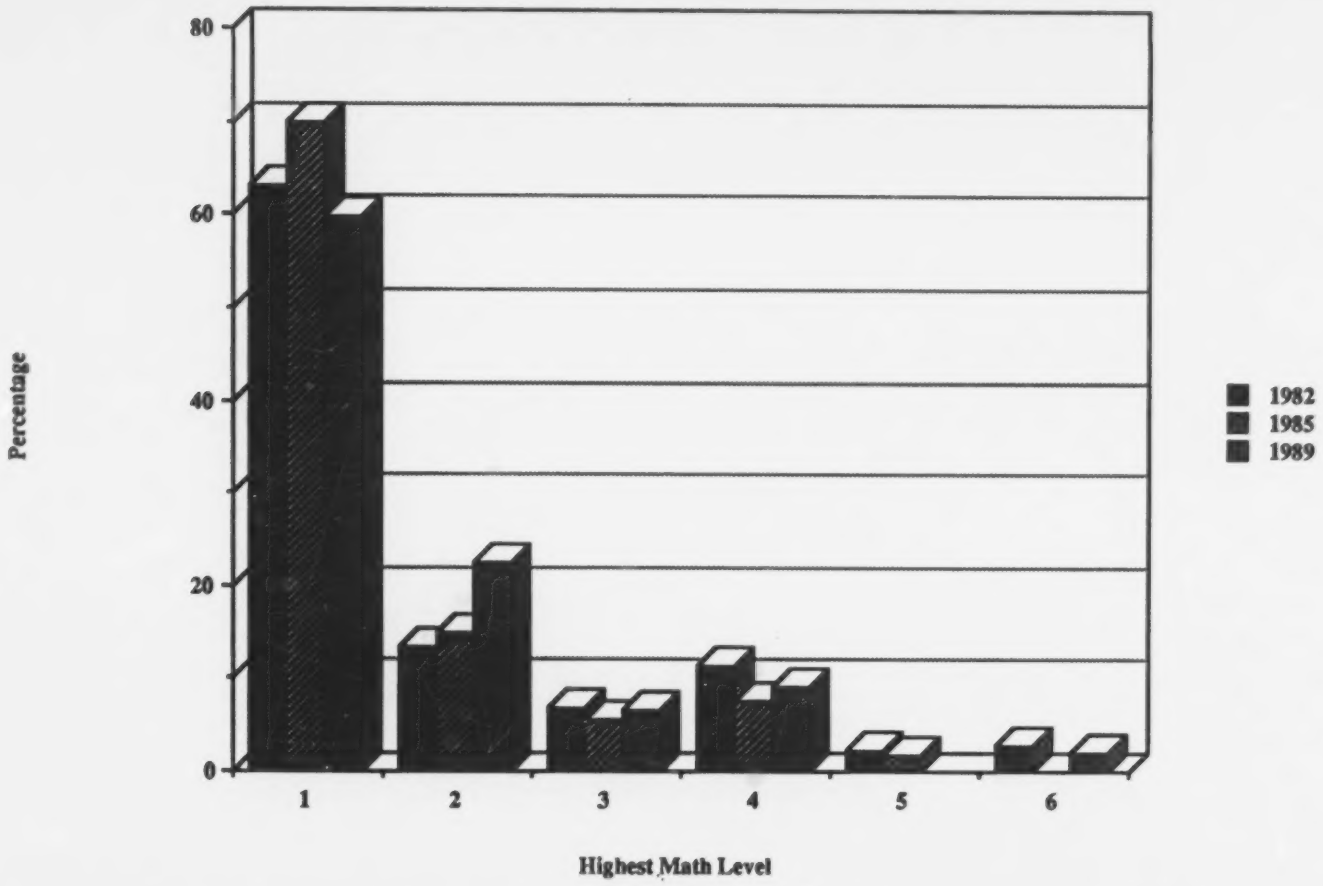
Note: Level 1: General Math 2: Algebra I 3: Geometry 4: Algebra II 5: Trigonometry 6: Advanced Math

Figure 4.3 ***Highest Math Level by Year: SATS Curriculum***



Note: Level 1: General Math 2: Algebra I 3: Geometry 4: Algebra II 5: Trigonometry 6: Advanced Math

Figure 4.4 ***Highest Math Level by Year: HSVOC Curriculum***



Note: Level 1: General Math 2: Algebra I 3: Geometry 4: Algebra II 5: Trigonometry 6: Advanced Math

2. Science: (see tables 7-7.3 & figures 5-5.4) Total science credits completed did increase. The increase was not dramatic because many students were taking three science credits in 1982 prior to reform. Total science credits earned by ACA students, for example, was virtually unchanged between 1982 and 1989 with the average student taking four science courses. The research did indicate that there was some movement of students higher in the curriculum: again, however, this movement was due mostly to the overall higher percentages of students enrolled in the academic program. As can be seen from comparing table 7.1 with 7.3, the percentage of non-academic students who failed to progress beyond general science biology changed little.

II. Questionnaire Data: High School Experience

Need for Career Information: (see tables 8-9) A research objective provided by the SATS advisory group was used to measure the degree to which graduates felt career information provided by the school system would have helped them choose courses and make post-secondary plans. Seventy-seven percent of all respondents indicated they would have benefitted from such information. Woman and GEN students were slightly more likely to indicate a desire for career information than males. Interestingly the longer individuals were out of high school the more likely they were to indicate they would have benefitted from more career information.

A majority of all respondents (54%) from all four curriculum types indicated that career information would have been the most helpful if provided in the 10th grade. An additional 33% indicated the information

Figure 5 *Highest Science Level by Year of Graduation*

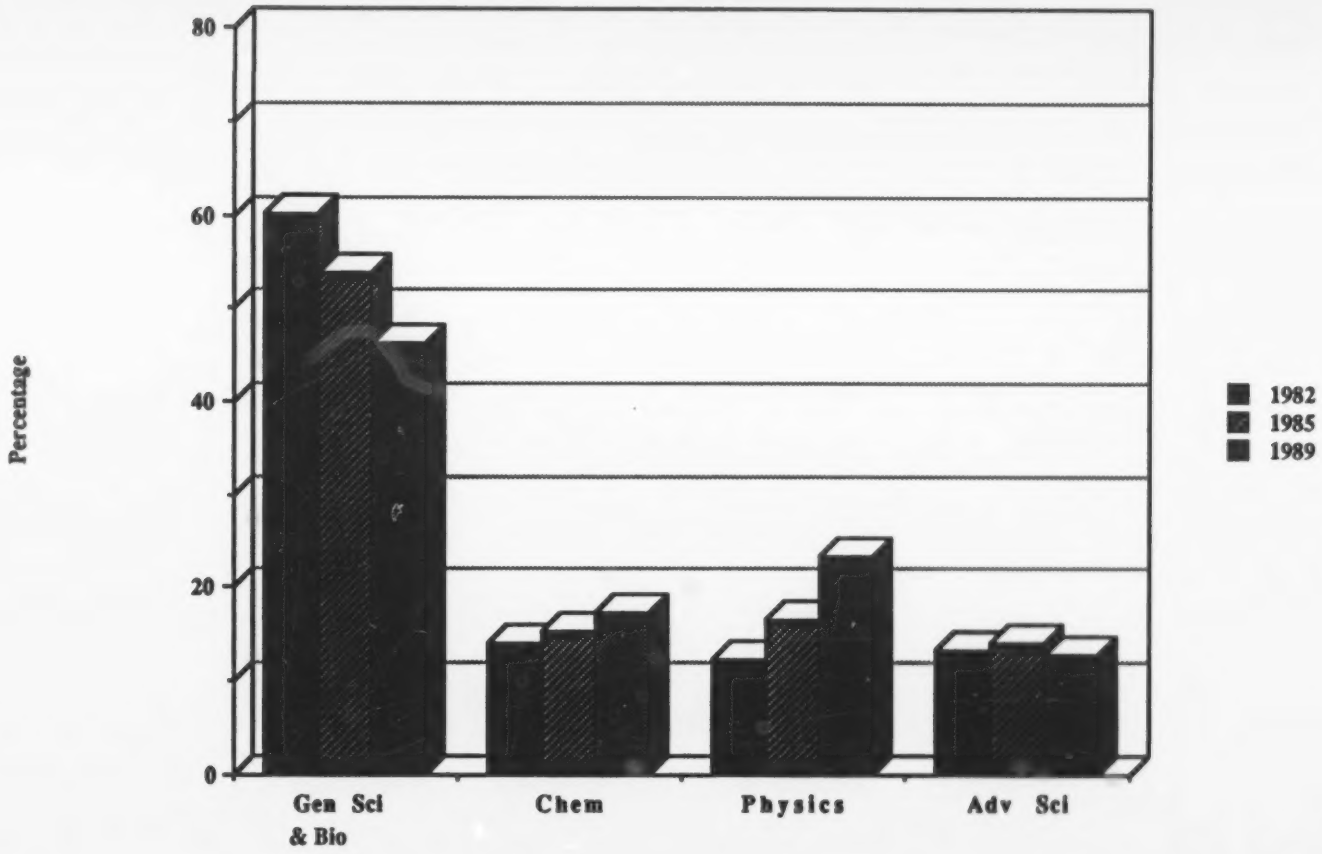


Figure 5.1 *Highest Science Level by Year: Academic Curriculum*

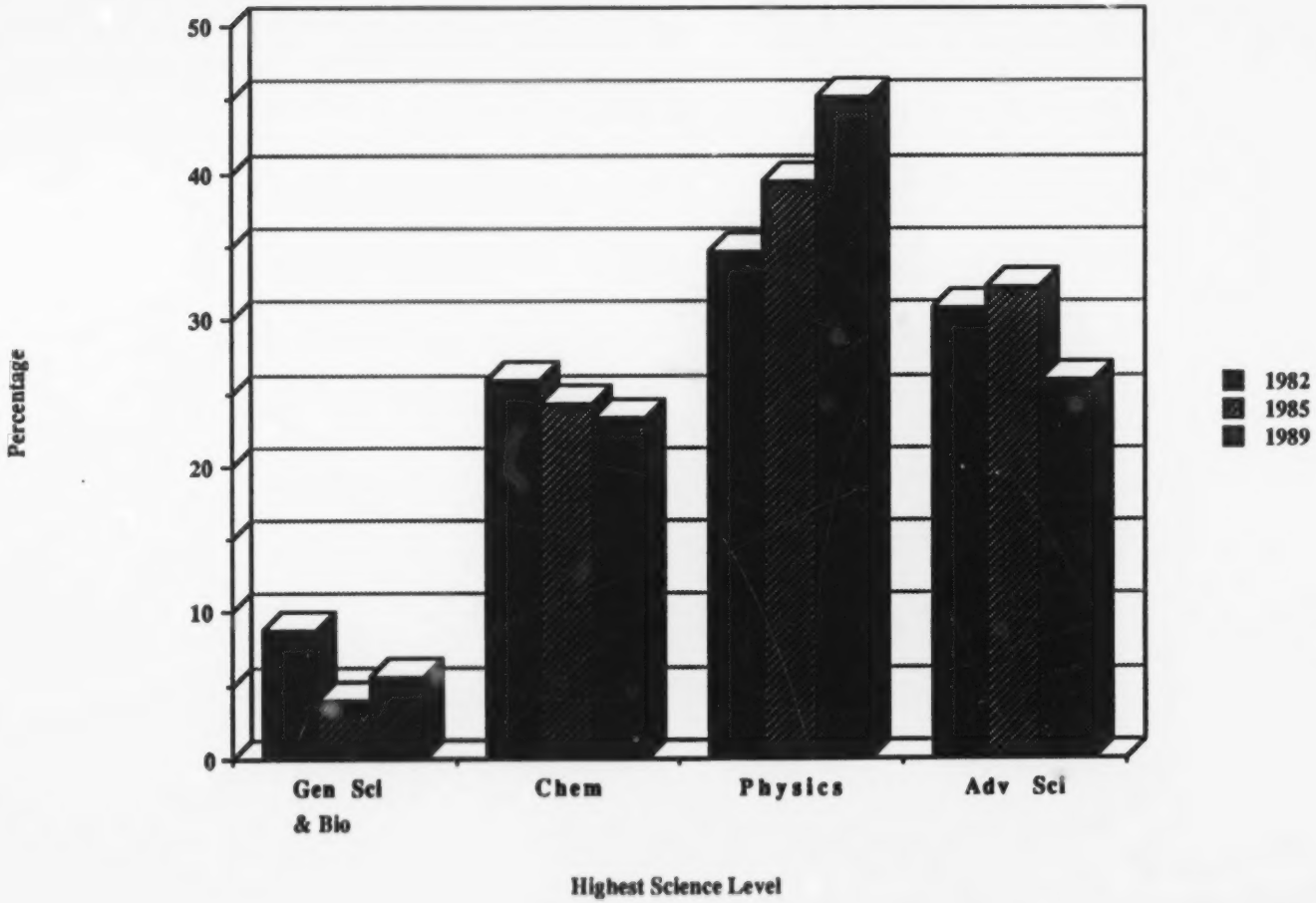


Figure 5.2 *Highest Science Level by Year: General Curriculum*

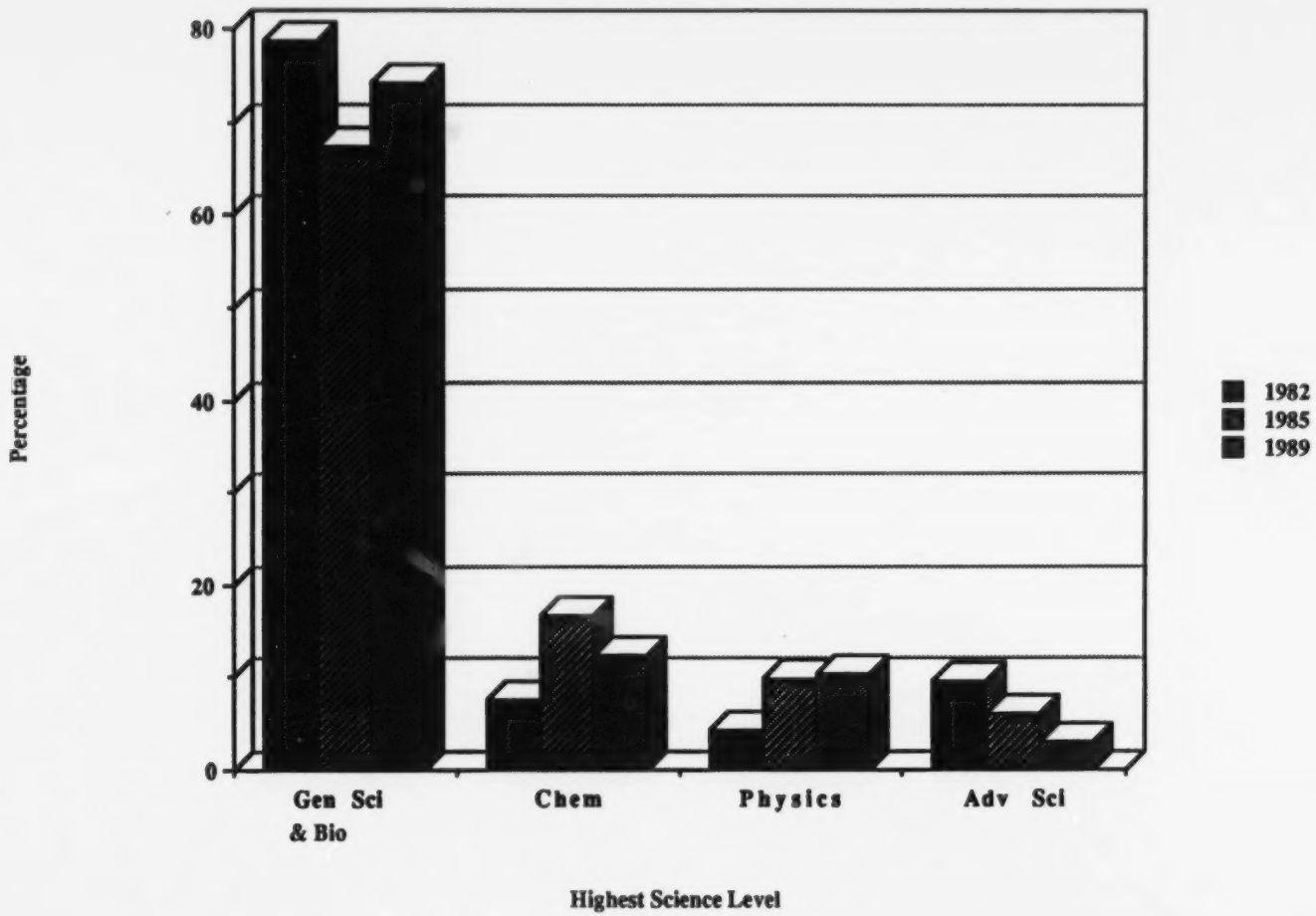


Figure 5.3 ***Highest Science Level by Year: SATS Curriculum***

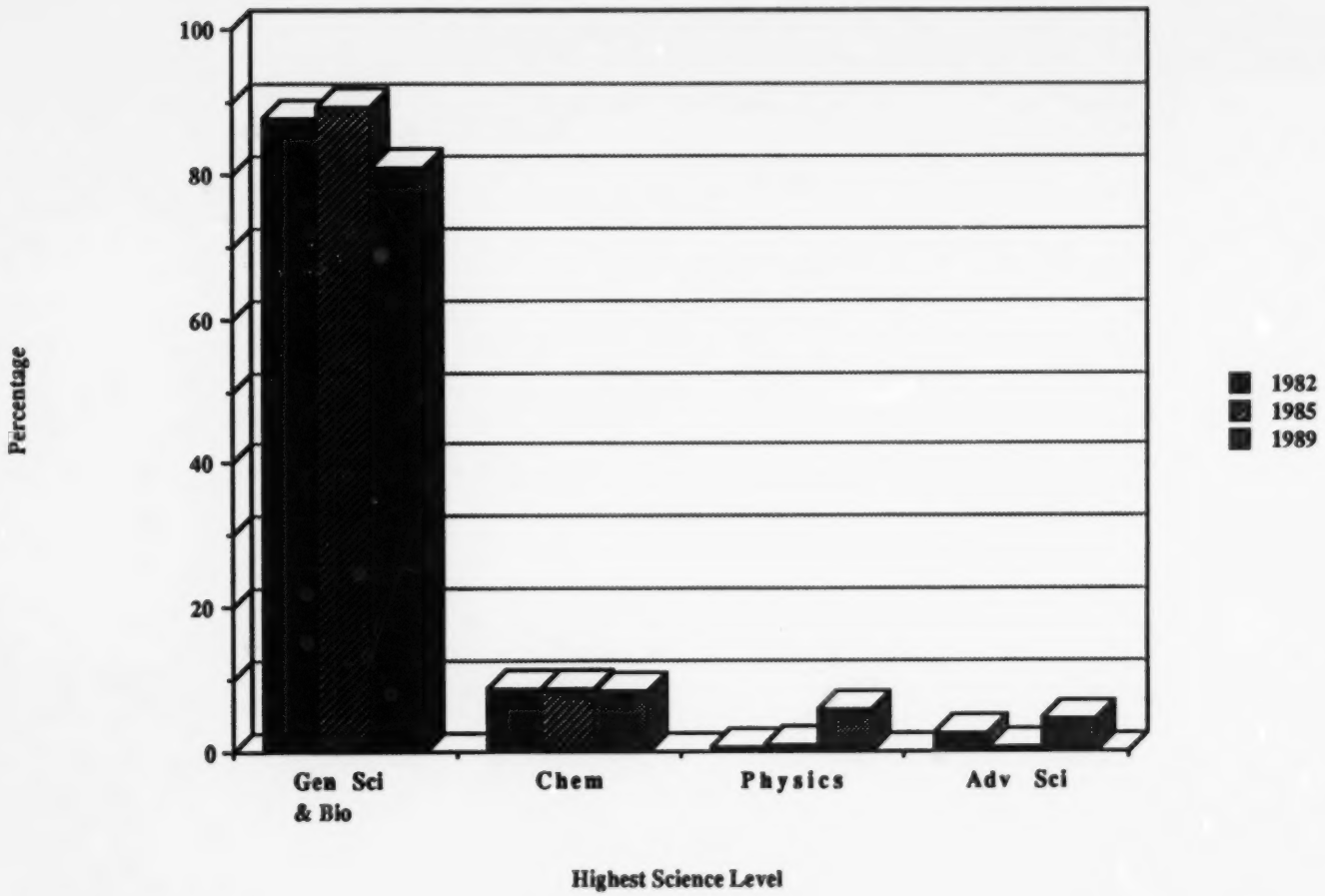
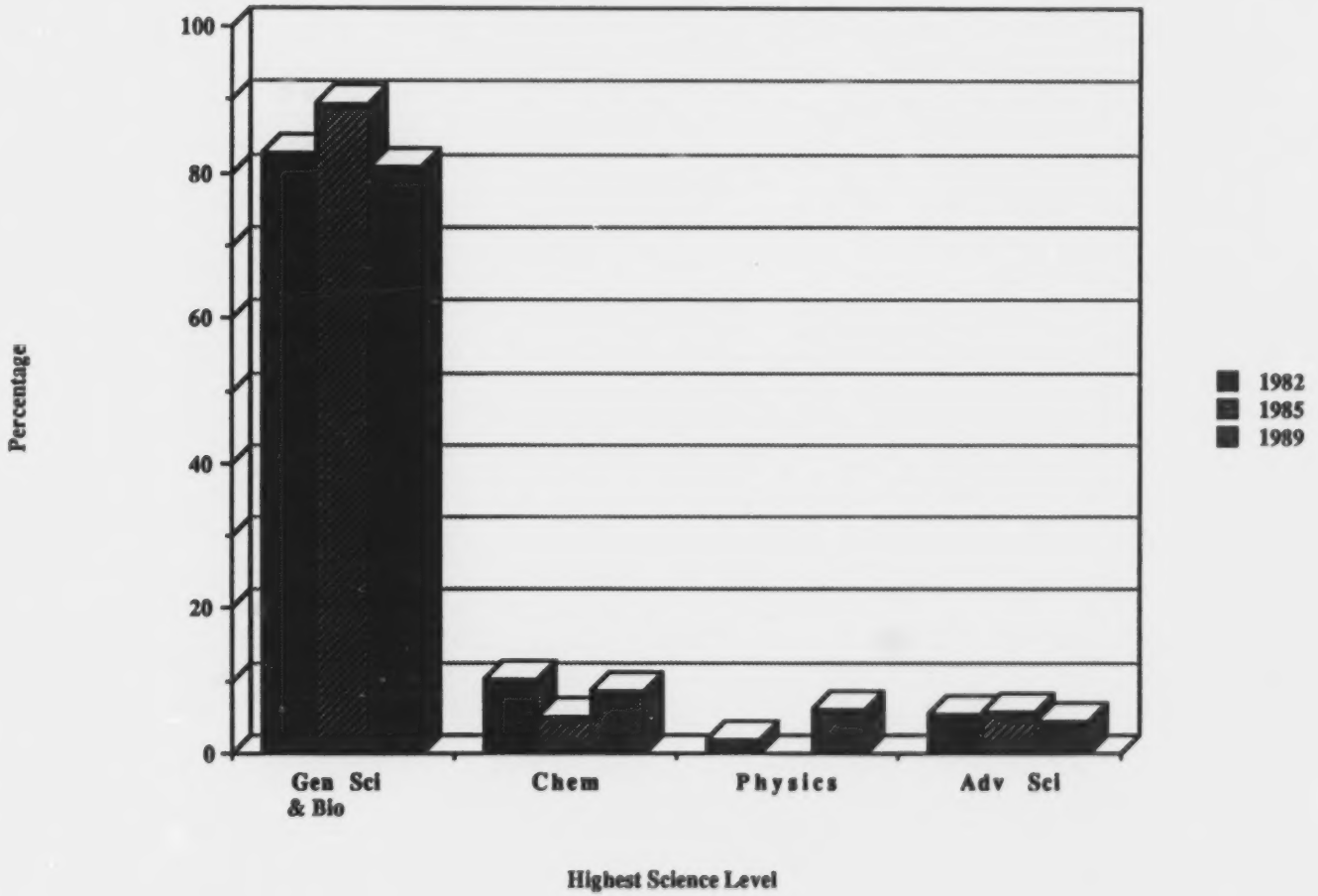


Figure 5.4 ***Highest Science Level by Year: HSVOC Curriculum***



would have been the most useful in the 8th grade; completers of the HSVOC programs particularly felt this way.

Those Influencing Post-Secondary Plans (see table 10): The most influencial individuals effecting the post-secondary plans of graduates were parents. Contrary to the pronouncements by some that guidance counselors are responsible for the "go to college" and not to vocational education movement, only 4% of the respondents indicated guidance counselors were the most influencial in making decisions about what to do after high school.

Satisfaction with High School Preparation: (see table 11-13) Only 10% of the respondents indicated they were not satisfied with the preparation they received in high school. Academic students were the most likely to indicate they were very satisfied with their preparation followed by HSVOC. Women were slightly more likely to be very satisfied with their preparation.

As a further measure of satisfaction, graduates were asked, "If they could repeat high school, would they choose a different program of study?" Twenty-five percent of the respondents indicated they would (see table 12). General students were the most likely to so indicate followed by HSVOC. Those who responded affirmatively were then asked what program of study they would take (see table 13). Responses varied markedly by curriculum type. ACA students indicated that they would most likely take the SATS program while SATS students indicated they would most likely take the ACA program. Forty-eight percent of all who would change if they had their high school years to do over again indicated they would take the ACA program.

III. Questionnaire Data: Post-Secondary Experiences

Mobility (see tables 14-14.1): Only 10% of the respondents had moved out of Pennsylvania. Eighty-five percent indicated they lived in a rural area. College graduates were the most likely to have moved out of state and vocational education graduates, both SATS and HSVOC, the most likely to still be living in the county. Sixty-nine percent of all respondents were unmarried.

Present Status: (see tables 15-15.2) Graduates were asked to indicate what they are presently doing. As might be expected, the distribution of graduates among the 10 response alternative varied markedly by year of graduation. Seventy-eight percent of all 1982 graduates were working full-time, 9% of which were working two jobs. Only 9% more men than women were working full-time. Less than 2% indicated they were unemployed and looking for work. Eight percent indicated they were homemakers.

Perhaps of most interest is the status of the class of 1989. Reflecting the increased preference for the ACA curriculum, 56% of the respondents indicated they were full-time students and 30% were working full-time. Importantly, almost half of all full-time students this group indicated they were also working part-time. Thirty-one percent of all graduates were working full-time. Only 5% of all graduates were in the military.

SATS students were the least likely to be full-time students (23%) but the most likely to be working full-time (63%) or in the arm services (8%) and the least likely to be unemployed.

IV. Questionnaire Data: Higher Education Experience

Sixty-one percent of all respondents indicated they had attended some type of higher education since graduation. ACA (90%) students were the most likely to attend higher education followed by GEN (51%), HSVOC (43%) and SATS (32%). Eighty-two percent of those who had attended some higher education did so within the state. SATS (22%) and GEN (21%) were the most likely to have attended out of state.

Type of Institution Attended: (see tables 16-16.4) During the period studied there was a growing preference for attending four-year colleges and a declining interest in community college education. Between 1982 and 1989 the percentages of students who attended four-year colleges after graduation increased 12% to 64% of all those who continued their education. Interest in two-year technical and business education had increased slightly over the period studied.

In the class of 1989, eighty-two percent of ACA graduates who went on to higher education attended four-year colleges, the rest were fairly evenly distributed among the other types of institutions. GEN students who went on most often attended four-year colleges (35%) and health care training programs (35%). Vocational students who continued their education showed the greatest diversity in the type of institution attended. They were the most likely to attend two-year technical and business programs as well as community college programs, at the same time about a fifth went on to four-year colleges.

Status in Program: There is often speculation that large numbers of students who pursue higher education do not finish. Based on the self-report of questionnaire respondents, this may not be the case here. For example, only 15% of the class of 1982 who continued their education indicated they did not finish. Only 1% of the class of 1989 indicated they had dropped out.

V. Questionnaire Data: Full-Time Employment

The following data was obtained from questionnaire respondents who were working full-time.

Distribution by Industry Sector (see tables 17-17.3): Questionnaire respondents who were working full-time were asked to indicate in which one of eight industry types they are employed. Manufacturing was the largest employer in all three graduating classes. In addition to manufacturing, recent high school graduates were the most likely to be working in food service industries or in other related service industries such as banking, insurance, etc. However, as graduates get older and more finish higher education, the distribution changes; while manufacturing still is the principal employer, food service employment dropped off and employment in the health and public sector service fields grew.

Looking at the class of 1982, ACA students were the most likely to be working in public and private sector service, the health field and then manufacturing. One half of all SATS students are employed in manufacturing while another 18% worked in construction.

Job Seeking Techniques: (see table 18) Respondents who were working full-time were asked how they found their present job. In all years of graduation the informal job market, family and friends, was the most common response. Calling on the employer directly was the second most frequent response. The only other major source was newspaper adds.

Size of Employer: (see tables 19-19.3) Nationally the majority of young workers are employed in firms of less than 100 employees (Gray & Wang, 1989); the same distribution was noted in the region studied. Fifty percent of all graduates and fifty-eight percent of the class of 1989 worked in firms of less than 100 employees. Thirty-three percent of the class of 1989 worked in firms of less than 20 and only 18% worked in firms of more than 500 employees. As graduates got older, and more complete higher education, the distribution becomes more normal as employment in large firms grew.

On the Job Training (see tables 20-20.2) Because of the assumption that high school graduates will be trained formally on the job thus vocational education is unnecessary, graduates were asked to indicate what type of training they received. Only 26% of all respondents who were working full-time indicated they had received any formal training. Forty-five percent or more were taught what to do by another employee.

The likelihood of graduates getting formal employer provided training is a function of both firm size and occupational group. The larger the firm the more likely formal training will be provided. Similarly employees are the least likely to get formal training in manufacturing where the largest group worked and the most likely to get this type of support in public sector

service, health occupations and private sector service which more often employed college graduates.

Commuting Distance: (see table 21) There is always speculation about how many individuals live in the region but work somewhere else. This study found most responded lived in the SATS service region and very close to where they worked. Forty percent of all responded lived within five miles of work. Only 11% traveled more than 20 miles one way to work.

Level of Employment: (see tables 22-23) Respondents were asked to indicate what administrative level of employment they held. Seventy-nine percent of all respondents were general employees. At the same time an impressive 23% of the class of 1982 reported they were managers/supervisors and an additional 5% indicated they owned their own business; SATS graduates were the most likely to be self-employed owners of business, while ACA graduates were the most likely to be supervisors/managers.

Job Satisfaction (see table 24): As a measure of job satisfaction and job mobility, graduates were asked whether they were seeking employment. Twenty-four percent of the respondents so indicated.

VI. Questionnaire Data: Wage Rates

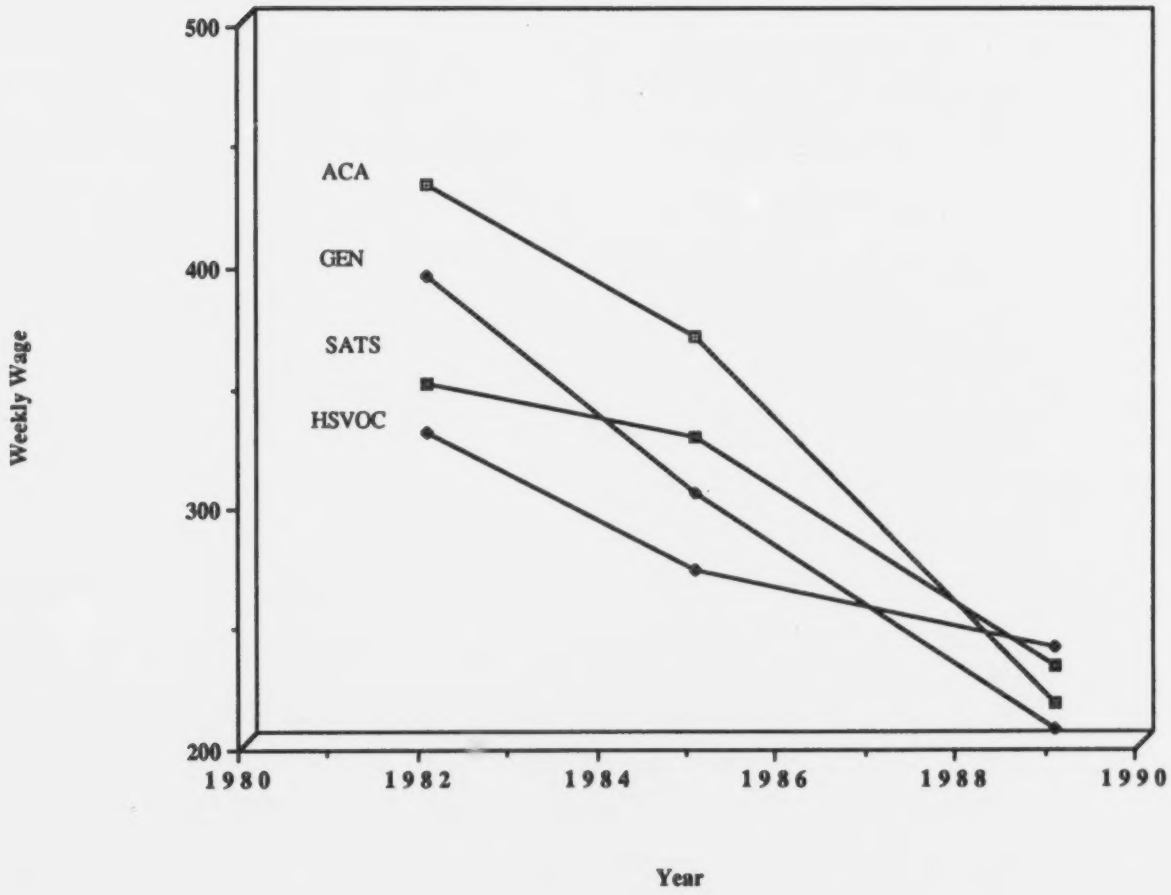
Graduates were asked to provide information from which weekly wage rates could be calculated. These wage rates provided both a measure of economic earning power of graduates as well as one indication of possible labor market advantages from graduating from different curricula.

The average weekly wage rate for all respondents who were working full-time was $325 (see table 25); men ($338) out earned women ($309). A comparison of wage rates by year of graduation and curriculum type is provide in Table 13 and illustrate in figure 6. Vocational students had a definite wage advantage over other curriculum immediately upon graduation. As graduates aged and more graduated from higher education, this wage rate advantage evaporated (see figure 6).

To assess the importance of higher education in this development, the weekly wage rates of those who did and did not attend higher education were compared. (see table 25.1 & 25.2) It was interesting to note that the labor market advantage to graduating from the ACA program existed only if followed by going on to higher education. ACA students who did not go on to higher education earn less than graduates from all other curricula. Also of note, graduates of vocational education curricula who go on to higher education do not earn significantly more than their fellow vocational graduates who do not.

Multiple regression analysis was used to determine what variables effected wage rates within the respondent group (see table 26). Higher wages were found to be related to being male, married, finishing college, working in large firms, receiving formal training, and working in a rural area ($F=13.499$, $pp< .001$, R-square = .3003).

Figure 6 *The Interaction of Curriculum Type and Year of Graduation: Weekly Wage*



SUMMARY

The purpose of this study was to examine the high school and post-high school experiences of graduates from the classes of 1982, 1985 and 1989 in order to provide data for evaluation and planning of secondary school programming. The period studied is particularly interesting because it covers the span of time that state of Pennsylvania increased graduation requirements; thus the research also provides data regarding the impact of these reforms.

The most dramatic change noted was the increased preference in preparing for and pursuing higher education, particularly four-year college education. This movement was significant for both genders but more so for females. Forty-four percent of all graduates completed the academic program of study in 1989 up 13% from 1984. This trend resulted in a paralleled growth in students attending higher education, reaching 61% in 1989, just about the state average. The growth in the academic program of study came at the expense of the vocational education programs of study but not the general curriculum. It is interesting to note however that the decline in enrollment in SATS program occurred after 1985 which may be understandable considering the program is a senior year program.

Of note and possible concern is the growing relative participation in the general program of study. The general program is now the second largest program of study in the region; one fifth of all students complete the general program, slightly more than the SATS and significantly more than the HSVOC. Between 1982 and 1989 the percentage of general students who did not take any vocational education increased from 25% to 40%. Forty-

eight percent of general students in 1989 took some (1 to 4 credits) but failed to complete an approved six-credit program. This large number leads to the speculation that students are finding it difficult to meet both graduation requirements and earn six credits in vocational education.

An analysis of the impact of increased graduation requirements also provides possible reason for some concern. The total credits earned by all students did increase, particularly for SATS students. However, except for ACA students, more credits did not necessarily mean moving higher in the curriculum. The average non-college preparatory student still does not progress beyond the level of general math or general science/biology. Obviously the objective of moving all students higher in the curriculum in general is not being achieved.

Respondents indicated a strong belief that career information, particularly in the 8th and 10th grade would have been helpful. Seventy percent of respondents from all curricular types so indicated, but general students and females showed the strongest interest.

Questionnaire results suggest that most graduates remain in the local areas though some caution need be used because of a possible underrepresentation of those who have moved. Most lived within five miles of work.

Manufacturing dominates employment, though college graduates are more apt to be found in public service careers. Food service is an important employer of recent graduates but less so as graduates get older. Immediately after high school vocational education graduates have higher weekly wages but this advantage fades over time probably due to fewer vocational education graduates completing some higher education. About

one fifth of those working full-time were looking for better employment. SATS graduates were the most likely to own their own business.

Graduates of the class of 1982 who were working full-time earned an average of $382 a week gross. Graduates of the class of 1989 were earning $226 per week. Being male, living in an urban area, completing higher education programs and working in firms of over 500 employees all had positive effects on wages.

References

Gray, K. & Wang, D. (1989). An Analyses of the Firm Size Variable in Youth Employment. American Vocational Education Research Journal.

Pennsylvania State Department of Education. (1989). Educational Statistics Projections to 1993-94.

Pennsylvania State Department of Education. (1990). Vocational Education: Secondary Program Statistics, 1988-89.

Table 1
Frequency Distributions of Transcript

Variable	Transcript FREQUENCY	%	FREQ
Curriculum Type			
Academic	1156	36.9	
General	673	21.4	
SATS	787	25.1	
HSVOC	521	16.6	
Total	3137	100.0	1
Handicapped Status (HD)			
Non-HD	3038	96.8	1
HD	99	3.2	
Total	3137	100.0	1
School			
Lewisburg	477	15.2	
Middleburg	372	11.9	
Mifflinburg	506	16.1	
Selinsgrove	607	19.3	
Shikellamy	892	28.5	
West Snyder	283	9.0	
Total	3137	100.0	1
Gender			
Male	1605	51.2	
Female	1532	48.8	
Total	3137	100.0	1
Year			
1982	1118	35.6	
1985	1039	33.1	
1989	980	31.3	
Total	3137	100.0	1

Transcript and Questionnaire Data

	Questionnaire		
%	FREQUENCY	%	RESPONSE RATE (%)
.9	533	41.9	46.1
.4	191	15.0	28.3
.1	350	27.6	44.3
.6	197	15.5	37.7
.0	1271	100.0	40.5
.8	1250	98.3	41.1
.2	21	1.7	21.2
.0	1271	100.0	40.5
.2	171	13.5	35.8
.9	177	13.9	47.6
.1	254	20.0	50.2
.3	275	21.6	45.3
.5	257	20.2	28.8
.0	137	10.8	48.4
.0	1271	100.0	40.5
.2	603	47.4	37.6
.8	668	52.6	43.6
.0	1271	100.0	40.5
.6	382	30.0	34.2
.1	423	33.3	40.7
.3	466	36.7	47.6
.0	1271	100.0	40.5

Table 2
Gender Distributions by Curriculum Type and Year of Graduation

	FREQUENCY PERCENT	Male	Female	Total
1982	Academic	164	181	345
		29.02	32.73	30.86
	General	121	135	256
		21.42	24.41	22.90
	SATS	211	97	308
		37.35	17.54	27.55
	HSVOC	69	140	209
		12.21	25.32	18.69
	Total	565	553	1118
		50.54	49.46	100.00
1985	Academic	177	201	378
		33.91	38.88	36.36
	General	109	107	216
		20.88	20.70	20.79
	SATS	187	98	285
		35.82	18.96	27.43
	HSVOC	49	111	160
		9.39	21.47	15.40
	Total	522	517	1039
		50.24	49.76	100.00
1989	Academic	213	220	433
		41.12	47.62	44.18
	General	105	96	201
		20.27	20.78	20.51
	SATS	132	62	194
		25.48	13.42	19.80
	HSVOC	68	84	152
		13.13	18.18	15.51
	Total	518	462	980
		52.86	47.14	100.00

Table 2.1
Distribution of Handicapped Student by Curriculum Type

FREQUENCY PERCENT	Academic	General	SATS	HSVOC	Total
Handicapped	4	43	32	20	99
	0.35	6.39	4.07	3.84	3.16
Not Handicapped	1152	630	755	501	3038
	99.65	93.61	95.93	96.16	96.84
Total	1156	673	787	521	3137
	36.85	21.54	25.09	16.61	100.00

Table 3
Total Credits by Curriculum Type and Year of Graduation

Curriculum Type	1982			1985			1989			Total		
	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD
ACA	345	25.63	2.12	378	25.76	2.64	433	27.08	2.11	1156	26.22	2.39
GEN	256	23.33	2.50	216	23.60	2.29	201	24.18	2.14	673	23.67	2.35
SATS	308	24.89	1.82	285	25.19	1.61	194	27.43	1.70	787	25.62	2.01
HSVOC	209	25.32	2.40	160	25.69	2.23	152	26.82	2.17	521	25.87	2.37
Total	1118	24.85	2.35	1039	25.14	2.40	980	26.51	2.38	3137	25.46	2.48

Table 4
Total Vocational Credits by Curriculum Type and Year of Graduation

Curriculum Type	1982			1985			1989			Total		
	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD
ACA	345	1.51	1.75	378	1.16	1.33	433	1.33	1.71	1156	1.32	1.61
GEN	255	2.99	2.31	216	2.35	1.88	201	1.97	1.90	672	2.48	2.10
SATS	308	9.28	1.88	285	8.98	2.19	194	9.06	2.38	787	9.12	2.13
HSVOC	209	7.07	1.81	160	7.42	1.97	152	6.61	2.27	521	7.05	2.02
Total	1117	5.03	3.78	1039	4.52	3.89	980	3.81	3.74	3136	4.48	3.84

Table 4.1
Total Vocational Credits by Year of Graduation

FREQUENCY PERCENT	1982	1985	1989	Total
TVOC <= 1	267	318	347	932
	23.90	30.61	35.41	29.72
1 < TVOC < 4	198	223	246	667
	17.73	21.46	25.10	21.27
4 <= TVOC < 6	136	61	76	273
	12.18	5.87	7.76	8.71
TVOC >= 6	516	437	311	1264
	46.20	42.06	31.73	40.31
Total	1117	1039	980	3136
	35.62	33.13	31.25	100.00
CHI-SQUARE	91.363***			

Note: ***=p<.001

Table 4.2
Total Vocational Credits by Curriculum Type: Year of 1982

FREQUENCY PERCENT	Academic	General	SATS	HSVOC	Total
TVOC < = 1	202	65	0	0	267
	58.55	25.49	0.00	0.00	23.90
1< TVOC < 4	96	96	0	6	198
	27.83	37.65	0.00	2.87	17.73
4 < = TVOC < 6	39	55	1	41	136
	11.30	21.57	0.32	19.62	12.18
TVOC > = 6	8	39	307	162	516
	2.32	15.29	99.68	77.51	46.20
Total	345	255	308	209	1117
	30.89	22.83	27.57	18.71	100.00
CHI-SQUARE	949.947***				

Note: ***=p<.001

Table 4.3
Total Vocational Credits by Curriculum Type: Year of 1985

FREQUENCY PERCENT	Academic	General	SATS	HSVOC	Total
TVOC <= 1	243	73	1	1	318
	64.29	33.80	0.35	0.63	30.61
1< TVOC < 4	119	99	0	5	223
	31.48	45.83	0.00	3.13	21.46
4 <= TVOC < 6	12	27	0	22	61
	3.17	12.50	0.00	13.75	5.87
TVOC >= 6	4	17	284	132	437
	1.06	7.87	99.65	82.50	42.06
Total	378	216	285	160	1039
	36.38	20.79	27.43	15.40	100.00
CHI-SQUARE	989.285***				

Note: ***=p<.001

Table 4.4
Total Vocational Credits by Curriculum Type: Year of 1989

FREQUENCY PERCENT	Academic	General	SATS	HSVOC	Total
TVOC <= 1	266	81	0	0	347
	61.43	40.30	0.00	0.00	35.41
1<TVOC<4	123	98	4	21	246
	28.41	48.76	2.06	13.82	25.10
4 <= TVOC < 6	30	9	5	32	76
	6.93	4.48	2.58	21.05	7.76
TVOC >= 6	14	13	185	99	311
	3.23	6.47	95.36	65.13	31.73
Total	433	201	194	152	980
	44.18	20.51	19.80	15.51	100.00
CHI-SQUARE	798.818***				

Note: ***=p<.001

Table 5
Grade Point Average by Curriculum Type and Year of Graduation

Curriculum Type	1982			1985			1989			Total		
	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD
ACA	345	7.44	2.12	378	7.40	2.21	432	7.87	1.88	1155	7.59	2.07
GEN	255	5.22	1.91	213	5.14	2.09	196	5.10	1.80	664	5.16	1.94
SATS	308	5.21	2.07	285	5.16	1.99	192	6.04	1.73	785	5.40	2.00
HSVOC	209	6.38	2.16	159	5.77	2.12	147	6.06	1.80	515	6.10	2.06
Total	1116	6.12	2.29	1035	6.07	2.35	967	6.67	2.14	3119	6.27	2.28

Table 6
Total Math Credits by Curriculum Type and Year of Graduation

Curriculum Type	1982			1985			1989			Total		
	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD
ACA	345	3.73	0.77	375	3.84	0.75	433	4.05	0.81	1153	3.89	0.79
GEN	253	2.39	0.96	215	2.67	0.89	201	2.88	0.85	669	2.63	0.93
SATS	308	2.28	0.74	285	2.46	0.80	194	3.04	0.53	787	2.53	0.78
HSVOC	208	2.41	0.96	160	2.36	0.92	152	3.09	1.04	520	2.59	1.02
Total	1113	2.78	1.06	1035	2.99	1.05	980	3.46	0.97	3129	3.06	1.07

Table 6.1
Highest Math Level by Curriculum Type: Year of 1982

FREQUENCY PERCENT	Academic	General	SATS	HSVOC	Total
General Math	4	116	226	132	478
	1.16	45.85	73.38	63.16	42.87
Algebra I	8	60	46	28	142
	2.32	23.72	14.94	13.40	12.74
Geometry	35	31	10	14	90
	10.14	12.25	3.25	6.70	8.07
Algebra II	81	31	16	24	152
	23.48	12.25	5.19	11.48	13.63
Trigonometry	90	2	9	5	106
	26.09	0.79	2.92	2.39	9.51
Advanced Math	127	13	1	6	147
	36.81	5.14	0.32	2.87	13.18
Total	345	253	308	209	1115
	30.94	22.69	27.62	18.74	100.00
CHI-SQUARE	699.577***				

Note: ***=p<.001

Table 6.2
Highest Math Level by Curriculum Type: Year of 1985

FREQUENCY PERCENT	Academic	General	SATS	HSVOC	Total
General Math	0	101	187	112	400
	0.00	46.98	65.61	70.00	38.61
Algebra I	5	43	36	24	108
	1.33	20.00	12.63	15.00	10.42
Geometry	24	19	24	9	76
	6.38	8.84	8.42	5.63	7.34
Algebra II	68	37	29	12	146
	18.09	17.21	10.18	7.53	14.09
Trigonometry	137	0	9	3	149
	36.44	0.00	3.16	1.88	14.38
Advanced Math	142	15	0	0	157
	37.77	6.98	0.00	0.00	15.15
Total	376	215	285	160	1036
	36.29	20.75	27.51	15.44	100.00
CHI-SQUARE	717.239***				

Note: ***=p<.001

Table 6.3
Highest Math Level by Curriculum Type: Year of 1989

FREQUENCY PERCENT	Academic	General	SATS	HSVOC	Total
General Math	5	70	121	91	287
	1.15	34.83	62.37	59.87	29.29
Algebra I	17	58	28	34	137
	3.93	28.86	14.43	22.37	13.98
Geometry	23	22	14	10	69
	5.31	10.95	7.22	6.58	7.04
Algebra II	99	37	22	14	172
	22.86	18.41	11.34	9.21	17.55
Trigonometry	164	6	8	0	178
	37.88	2.99	4.12	0.00	18.16
Advanced Math	125	8	1	3	137
	28.87	3.98	0.52	1.97	13.98
Total	433	201	194	152	980
	44.18	20.51	19.80	15.51	100.00
CHI-SQUARE	625.209***				

Note: ***=p<.001

Table 7
Total Science Credits by Curriculum Type and Year of Graduation

Curriculum Type	1982			1985			1989			Total		
	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD
ACA	344	3.70	0.92	375	3.87	0.99	433	3.86	0.79	1152	3.82	0.90
GEN	253	2.82	0.72	215	2.88	0.74	201	2.35	0.59	669	3.00	0.73
SATS	304	2.51	0.53	285	2.50	0.51	194	3.03	0.18	783	2.64	0.51
HSVOC	207	2.47	0.69	160	2.43	0.71	152	3.20	0.47	519	2.67	0.73
Total	1108	2.94	0.90	1035	3.07	1.01	980	3.49	0.71	3123	3.16	0.92

Table 7.1
Highest Science Level by Curriculum Type: Year of 1982

FREQUENCY PERCENT	Academic	General	SATS	HSVOC	Total
General Science & Biology	30 8.72	199 78.66	267 87.83	171 82.61	667 60.20
Chemistry	89 25.87	19 7.51	27 8.88	21 10.14	156 14.08
Physics	119 34.59	11 4.35	2 0.66	4 1.93	136 12.27
Advanced Science	106 30.81	24 9.49	8 2.63	11 5.31	149 13.45
Total	344 31.05	253 22.83	304 27.44	207 18.68	1108 100.00
CHI-SQUARE	592.156***				

Note: ***=p<.001

Table 7.2
Highest Science Level by Curriculum Type: Year of 1985

FREQUENCY PERCENT	Academic	General	SATS	HSVOC	Total
General Science & Biology	15 4.00	145 67.44	255 89.47	143 89.38	558 53.91
Chemistry	91 24.27	36 16.74	25 8.77	8 5.00	160 15.46
Physics	148 39.47	21 9.77	3 1.05	0 0.00	172 16.62
Advanced Science	121 32.27	13 6.05	2 0.70	9 5.63	145 14.01
Total	375 36.23	215 20.77	285 27.54	160 15.46	1035 100.00
CHI-SQUARE	658.393***				

Note: ***=p<.001

Table 7.3
Highest Science Level by Curriculum Type: Year of 1989

FREQUENCY PERCENT	Academic	General	SATS	HSVOC	Total
General Science & Biology	24 5.54	149 74.13	158 81.44	123 80.92	454 46.33
Chemistry	101 23.33	25 12.44	32 16.49	13 8.55	171 17.45
Physics	196 45.27	21 10.45	3 1.55	9 5.92	229 23.37
Advanced Science	112 25.87	6 2.99	1 0.52	7 4.61	126 12.86
Total	433 44.18	201 20.51	194 19.80	152 15.51	980 100.00
CHI-SQUARE	564.179***				

Note: ***=p<.001

Table 8
The Need for Career Information by Curriculum Type, Gender, and Year of Graduation

Variable	Need for Career Information: Yes FREQUENCY	Yes %	No FREQUENCY	No %	CHI-SQUARE
Curriculum Type					
Academic	405	77.29	119	22.71	7.799*
General	159	82.38	34	17.62	
SATS	266	76.22	83	23.78	
HSVOC	139	70.56	58	29.44	
Total	969	76.72	294	23.28	
Gender					
Male	443	73.59	159	26.41	6.326*
Female	526	79.58	135	20.42	
Total	969	76.72	294	23.28	
Year of Graduation					
1982	313	80.88	74	19.12	6.554*
1985	321	76.61	98	23.39	
1989	337	73.42	122	26.58	
Total	971	76.76	294	23.24	

Note: *=p<.05

Table 9
The Most Helpful Timing for Career Information by Curriculum Type

FREQUENCY PERCENT	Academic	General	SATS	HSVOC	Total
Elementary	7	4	6	1	18
	1.41	2.16	1.77	0.52	1.48
Junior High	144	53	123	84	404
	28.97	28.65	36.28	43.52	33.28
10th Grade	297	106	161	89	653
	59.76	57.30	47.49	46.11	53.79
12th Grade	49	22	49	19	139
	9.86	11.89	14.45	9.84	11.45
Total	497	185	339	193	1214
	40.94	15.24	27.92	15.90	100.00
CHI-SQUARE	25.525**				

Note: **=p<.01

Table 10
The Most Influential Person in Decision Making for Postsecondary Activities by Curriculum Type

FREQUENCY PERCENT	Academic	General	SATS	HSVOC	Total
Father	89 17.45	24 13.33	49 14.37	23 11.92	185 15.11
Mother	93 18.24	38 21.11	45 13.20	28 14.51	204 16.67
Friend	40 7.84	20 11.11	36 10.56	24 12.44	120 9.80
Academic Teacher	38 7.45	9 5.00	4 1.17	9 4.66	60 4.90
Vocational Teacher	5 0.98	2 1.11	64 18.77	20 10.36	91 7.43
Guidance Counselor	27 5.29	10 5.56	6 1.76	5 2.59	48 3.92
Other	156 30.59	65 36.11	126 36.95	70 36.27	417 34.07
Both Parents	62 12.16	12 6.67	11 3.23	14 7.25	99 8.09
Total	510 41.67	180 14.71	341 27.86	193 15.77	1224 100.00
CHI-SQUARE	162.045***				

Note: ***=p<.001

Table 11
Satisfaction with High School Program by Curriculum Type

FREQUENCY PERCENT	Academic	General	SATS	HSVOC	Total
Not Satisfied	50	24	43	6	123
	9.47	12.44	12.50	3.03	9.74
Somewhat Satisfied	274	125	220	129	748
	51.89	64.77	63.95	65.15	59.22
Very Satisfied	204	44	81	63	392
	38.64	22.80	23.55	31.82	31.04
Total	528	193	344	198	1263
	41.81	15.28	27.24	15.68	100.00
CHI-SQUARE	41.892***				

Note: ***=p<.001

Table 12
Opinion toward Repeating High School in a Different Curriculum by Curriculum Type

FREQUENCY PERCENT	Academic	General	SATS	HSVOC	Total
Take a Different Program	58	84	101	71	314
	10.92	43.98	28.94	35.50	24.70
Not to Take a Different Program	473	107	248	129	957
	89.08	56.02	71.06	64.50	75.30
Total	531	191	349	200	1271
	41.78	15.03	27.46	15.74	100.00
CHI-SQUARE	108.261***				

Note: ***=p<.001

Table 13
The High School Curriculum to be Repeated by Curriculum Type

FREQUENCY PERCENT	Academic	General	SATS	HSVOC	Total
College Program	17	32	73	34	156
	29.31	36.78	70.87	45.95	48.45
SATS	15	36	15	25	91
	25.86	41.38	14.56	33.78	28.26
HSVOC	26	16	15	13	70
	44.83	18.39	14.56	17.57	21.74
General	0	3	0	2	5
	0.00	3.45	0.00	2.70	1.55
Total	58	87	103	74	322
	18.01	27.02	31.99	22.98	100.00
CHI-SQUARE	53.516***				

Note: ***=p<.001

Table 14
Mobility Status by Curriculum Type

FREQUENCY PERCENT	Academic	General	SATS	HSVOC	Total
Never Moved	287 53.64	99 51.56	199 56.70	105 52.24	690 53.95
Moved within County	66 12.34	44 22.92	96 27.35	57 28.36	263 20.56
Moved within State	104 19.44	26 13.54	36 10.26	31 15.42	197 15.40
Moved out of PA	78 14.58	23 11.98	20 5.70	8 3.98	129 10.09
Total	535 41.83	192 15.01	351 27.44	201 15.72	1279 100.00
CHI-SQUARE	70.389***				

Note: ***=p<.001

Table 14.1
Mobility Status by Curriculum Type: Year of 1982

FREQUENCY PERCENT	Academic	General	SATS	HSVOC	Total
Never Moved	22 15.94	21 34.43	50 42.74	29 42.65	122 31.77
Moved within County	39 28.26	18 29.51	46 39.32	26 38.24	129 33.59
Moved within State	44 31.88	12 19.67	15 12.82	11 16.18	82 21.35
Moved out of PA	33 23.91	10 16.39	6 5.13	2 2.94	51 13.28
Total	138 35.94	61 15.89	117 30.47	68 17.71	384 100.00
CHI-SQUARE	56.635***				

Note: ***=p<.001

Table 15
Current Status by Curriculum Type: Year of 1982

FREQUENCY PERCENT	Academic	General	SATS	HSVOC	Total
Working Full-time not a Student	89 64.49	47 77.05	94 79.66	42 62.69	272 70.83
Working Full-time & a Part-time Job	12 8.70	3 4.92	5 4.24	10 14.93	30 7.81
Full-time Student	5 3.62	0 0.00	1 0.85	0 0.00	6 1.56
Full-time Student & a Part-time Job	12 8.70	0 0.00	3 2.54	0 0.00	15 3.91
Working Part-time	5 3.62	3 4.92	3 2.54	2 2.99	13 3.39
Working Part-time & Seeking Full-time Job	1 0.72	0 0.00	1 0.85	0 0.00	2 0.52
In the Armed Forces	6 4.35	0 0.00	1 0.85	1 1.49	8 2.08
Homemaker	8 5.80	6 9.84	7 5.93	9 13.43	30 7.81
Unable to Work Due to Health Problem	0 0.00	0 0.00	1 0.85	0 0.00	1 0.26
Unemployed, but Looking for Work	0 0.00	2 3.28	2 1.69	3 4.48	7 1.82
Unemployed, not Looking for Work	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00
Total	138 35.94	61 15.89	118 30.73	67 17.45	384 100.00
CHI-SQUARE	49.655**				

Note: **=P<.01

Table 15.1
Current Status by Curriculum Type: Year of 1985

FREQUENCY PERCENT	Academic	General	SATS	HSVOC	Total
Working Full-time not a Student	81 50.63	35 56.45	99 78.57	53 74.65	268 63.96
Working Full-time & a Part-time Job	2 1.25	6 9.68	8 6.35	3 4.23	19 4.53
Full-time Student	21 13.13	3 4.84	0 0.00	1 1.41	25 5.97
Full-time Student & a Part-time Job	22 13.75	5 8.06	4 3.17	2 2.82	33 7.88
Working Part-time	2 1.25	3 4.84	1 0.79	4 5.63	10 2.39
Working Part-time & Seeking Full-time Job	13 8.13	5 8.06	0 0.00	2 2.82	20 4.77
In the Armed Forces	10 6.25	2 3.23	6 4.76	0 0.00	18 4.30
Homemaker	5 3.13	2 2.23	6 4.76	4 5.63	17 4.06
Unable to Work Due to Health Problem	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00
Unemployed, but Looking for Work	4 2.50	1 1.61	2 1.59	2 2.82	9 2.15
Unemployed, not Looking for Work	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00
Total	160 38.19	62 14.80	126 30.07	71 16.95	419 100.00
CHI-SQUARE	80.447***				

Note: ***=p<.001

Table 15.2
Current Status by Curriculum Type: Year of 1989

FREQUENCY PERCENT	Academic	General	SATS	HSVOC	Total
Working Full-time not a Student	15 6.52	24 34.29	65 61.32	24 40.68	128 27.53
Working Full-time & a Part-time Job	5 2.17	2 2.86	3 2.83	3 5.08	13 2.80
Full-time Student	124 53.91	11 15.71	11 10.38	9 15.25	155 33.33
Full-time Student & a Part-time Job	67 29.13	15 21.43	13 12.26	12 20.34	107 23.01
Working Part-time	5 2.17	2 2.86	0 0.00	0 0.00	7 1.51
Working Part-time & Seeking Full-time Job	1 0.43	4 5.71	1 0.94	4 6.78	10 2.15
In the Armed Forces	8 3.48	5 7.14	9 8.49	2 3.39	24 5.16
Homemaker	0 0.00	2 2.86	2 1.89	1 1.69	5 1.08
Unable to Work Due to Health Problem	2 0.87	2 2.86	2 1.89	0 0.00	6 1.29
Unemployed, but Looking for Work	2 0.87	2 2.86	0 0.00	2 3.39	6 1.29
Unemployed, not Looking for Work	1 0.43	1 1.43	0 0.00	2 3.39	4 0.86
Total	230 49.46	70 15.05	106 22.80	59 12.69	465 100.00
CHI-SQUARE	196.249***				

Note: ***=P<.001

Table 16
Postsecondary Education Attendance by Curriculum Type and Year of Graduation

Variable	Attended		Never Attended		Total	
	FREQUENCY	%	FREQUENCY	%	FREQUENCY	%
Curriculum Type						
Academic	479	90.04	53	9.96	532	41.96
General	97	50.79	94	49.21	191	15.06
SATS	112	32.46	233	67.54	345	27.21
HSVOC	86	43.00	114	57.00	200	15.77
Total	774	61.04	494	38.96	1268	100.00
CHI-SQUARE	342.391***					
Year						
1982	232	60.42	152	39.58	384	30.24
1985	251	59.20	173	40.80	424	33.39
1989	292	63.20	170	36.80	462	36.38
Total	775	61.02	495	38.98	1270	100.00
CHI-SQUARE	1.577					

Note: ***=p<.001

Table 16.1
Type of Postsecondary Education Attained by Curriculum Type: Year of 1982

FREQUENCY PERCENT	Academic	General	SATS	HSVOC	Total
2-year Business, Trade or Technical School	6	5	4	6	21
	5.08	13.16	9.76	21.43	9.33
Community College	5	2	18	8	33
	4.24	5.26	43.90	28.57	14.67
University Branch Campus	0	1	1	1	3
	0.00	2.63	2.44	3.57	1.33
4-year College or University	94	14	4	5	117
	79.66	36.84	9.76	17.86	52.00
Others	13	16	14	8	51
	11.02	42.11	34.15	28.57	22.67
Total	118	38	41	28	225
	52.44	16.89	18.22	12.44	100.00
CHI-SQUARE	104.986***				

Note: ***=P<.001

Table 16.2
Type of Postsecondary Education Attained by Curriculum Type: Year of 1985

FREQUENCY PERCENT	Academic	General	SATS	HSVOC	Total
2-year Business, Trade or Technical School	6	3	4	8	21
	4.00	9.38	9.52	27.59	8.30
Community College	10	1	14	7	32
	6.67	3.13	33.33	24.14	12.65
University Branch Campus	2	2	0	0	4
	1.33	6.25	0.00	0.00	1.58
4-year college or University	120	15	2	5	142
	80.00	46.88	4.76	17.24	56.13
Others	12	11	22	9	54
	8.00	34.38	52.38	31.03	21.34
Total	150	32	42	29	253
59.29	12.65	16.60	11.46	100.00	
CHI-SQUARE	124.389***				

Note: ***=P<.001

Table 16.3
Type of Postsecondary Education Attained by Curriculum Type: Year of 1989

FREQUENCY PERCENT	Academic	General	SATS	HSVOC	Total
2-year Business, Trade or Technical School	7	5	11	9	32
	3.54	16.13	33.33	33.33	11.07
Community College	10	3	4	5	22
	5.05	9.68	12.12	18.52	7.61
University Branch Campus	3	1	3	0	7
	1.52	3.23	9.09	0.00	2.42
4-year College or University	163	11	6	6	186
	82.32	35.48	18.18	22.22	64.36
Others	15	11	9	7	42
	7.58	35.48	27.27	25.93	14.53
Total	198	31	33	27	289
	68.51	10.73	11.42	9.34	100.00
CHI-SQUARE	106.556***				

Note: ***=P<.001

Table 16.4
Location of Postsecondary Institution by Curriculum Type

FREQUENCY PERCENT	Academic	General	SATS	HSVOC	Total
Out of State	83	22	28	8	141
	17.66	20.75	22.22	9.76	17.98
Within State	387	84	98	74	643
	82.34	79.25	77.78	90.24	82.02
Total	470	106	126	82	784
	59.95	13.52	16.07	10.46	100.00
CHI-SQUARE	5.883				

Table 17
Job Distributions by Industry Sector and Year of Graduation

FREQUENCY PERCENT	1982	1985	1989	Total
Manufacturing	97 32.88	85 27.69	62 39.74	244 32.19
Construction	23 7.80	44 14.33	11 7.05	78 10.29
Service-banking, Insurance,...	48 16.27	50 16.29	19 12.18	117 15.44
Food Service	21 7.12	30 9.77	33 21.15	84 11.08
Transportation	13 4.41	11 3.58	9 5.77	33 4.35
Agriculture	7 2.37	6 1.95	3 1.92	16 2.11
Health Occupations	41 13.90	40 13.03	11 7.05	92 12.14
Public Sectors	45 15.25	41 13.36	8 5.13	94 12.40
Total	295 38.92	307 40.50	156 20.58	758 100.00
CHI-SQUARE	47.668***			

Note: ***=p<.001

Table 17.1
Job Distributions by Industry Sector and Curriculum Type: Year of 1982

FREQUENCY PERCENT	Academic	General	SATS	HSVOC	Total
Manufacturing	18 16.98	11 28.21	49 50.52	19 36.54	97 32.99
Construction	2 1.89	2 5.13	17 17.53	2 3.85	23 7.82
Service-banking, Insurance,...	24 22.64	8 20.51	9 9.28	6 11.54	47 15.99
Food Service	12 11.32	2 5.13	5 5.15	2 3.85	21 7.14
Transportation	2 1.89	4 10.26	6 6.19	1 1.92	13 4.42
Agriculture	1 0.94	0 0.00	1 1.03	5 9.62	7 2.38
Health Occupations	21 19.81	10 25.64	4 4.12	6 11.54	41 13.54
Public Sectors	26 24.53	2 5.13	6 6.19	11 21.15	45 15.31
Total	106 36.05	39 13.27	97 32.99	52 17.69	294 100.00
CHI-SQUARE	94.855***				

Note: ***=p<.001

Table 17.2
Job Distributions by Industry Sector and Curriculum Type: Year of 1985

FREQUENCY PERCENT	Academic	General	SATS	HSVOC	Total
Manufacturing	17 18.68	14 31.11	39 34.82	15 25.42	85 27.69
Construction	2 2.20	4 8.89	32 28.57	6 10.17	44 14.33
Service-banking Insurance,...	21 23.08	8 17.78	9 8.04	12 20.34	50 16.29
Food Service	9 9.89	5 11.11	6 5.36	10 16.95	30 9.77
Transportation	3 3.30	2 4.44	6 5.36	0 0.00	11 3.58
Agriculture	1 1.10	0 0.00	3 2.68	2 3.39	6 1.95
Health Occupations	16 17.58	8 17.78	10 8.93	6 10.17	40 13.03
Public Sectors	22 24.18	4 8.89	7 6.25	8 13.56	41 13.36
Total	91 29.64	45 14.66	112 36.48	59 19.22	307 100.00
CHI-SQUARE	67.486***				

Note: ***=p<.001

Table 17.3
Job Distributions by Industry Sector and Curriculum Type: Year of 1989

FREQUENCY PERCENT	Academic	General	SATS	HSVOC	Total
Manufacturing	11 40.74	11 36.67	24 35.29	16 51.61	62 39.74
Construction	1 3.70	3 10.00	6 8.82	1 3.23	11 7.05
Service-banking Insurance,...	5 18.52	2 6.67	5 7.35	7 22.58	19 12.18
Food Service	6 22.22	12 40.00	13 19.12	2 6.45	33 21.15
Transportation	1 3.70	0 0.00	8 11.76	0 0.00	9 5.77
Agriculture	0 0.00	0 0.00	1 1.47	2 6.45	3 1.92
Health Occupations	0 0.00	0 0.00	10 14.71	1 3.23	11 7.05
Public Sectors	3 11.11	2 6.67	1 1.47	2 6.45	8 5.13
Total	27 17.31	30 19.23	68 43.59	31 19.87	156 100.00
CHI-SQUARE	43.953**				

Note: **=p<.01

Table 18
Job Seeking Technique by Year of Graduation

FREQUENCY PERCENT	1982	1985	1989	Total
Co-op Program	2	10	19	31
	0.65	3.11	11.24	3.88
Guidance Counselor Referral	2	4	2	8
	0.65	1.24	1.18	1.00
High School-Teacher Referral	1	6	2	9
	0.33	1.86	1.18	1.13
Family or Friend Referral	111	109	65	285
	36.16	33.85	38.46	35.71
Newspaper Ad.	46	46	18	110
	14.98	14.29	10.65	13.78
State Employment Office	9	6	2	17
	2.93	1.86	1.18	2.13
JTPA	1	1	0	2
	0.33	0.31	0.00	0.25
College Placement Office	9	18	1	28
	2.93	5.59	0.59	3.51
Went to Employer	83	79	44	206
	27.04	24.53	26.04	25.81
Other	43	43	16	102
	14.01	13.35	9.47	12.78
Total	307	322	169	798
	38.47	40.35	21.18	100.00
CHI-SQUARE	51.433***			

Note: ***=p<.001

Table 19
Firm Size by Year of Graduation

FREQUENCY PERCENT	1982	1985	1989	Total
1-19	79 25.24	82 25.79	54 32.93	215 27.04
20-99	72 23.00	68 21.38	42 25.61	182 22.89
100-499	79 25.24	90 28.30	38 23.17	207 26.04
500 and more	83 26.52	78 24.53	30 18.29	191 24.03
Total	313 39.37	318 40.00	164 20.63	795 100.00
CHI-SQUARE	7.815			

Table 19.1
Firm Size by Curriculum Type: Year of 1982

FREQUENCY PERCENT	Academic	General	SATS	HSVOC	Total
1-19	22 19.82	12 26.67	23 23.00	21 37.50	78 25.00
20-99	32 28.83	14 31.11	18 18.00	8 14.29	72 23.08
100-499	25 22.52	10 22.22	33 33.00	11 19.64	79 25.32
500 and more	32 28.83	9 20.00	26 26.00	16 28.57	83 26.60
Total	111 35.58	45 14.42	100 32.05	56 17.95	312 100.00
CHI-SQUARE	15.339				

Table 19.2
Firm Size by Curriculum Type: Year of 1985

FREQUENCY PERCENT	Academic	General	SATS	HSVOC	Total
1-19	18	8	35	21	82
	18.56	18.18	30.43	33.87	25.79
20-99	27	9	17	15	68
	27.84	20.45	14.78	24.19	21.38
100-499	23	13	38	16	90
	23.71	29.55	33.04	25.81	28.30
500 and more	29	14	25	10	78
	29.90	31.82	21.74	16.13	24.53
Total	97	44	115	62	318
	30.50	13.84	36.16	19.50	100.00
CHI-SQUARE	16.003				

Table 19.3
Firm Size by Curriculum Type: Year of 1989

FREQUENCY PERCENT	Academic	General	SATS	HSVOC	Total
1-19	7 25.93	12 40.00	28 37.84	7 21.21	54 32.93
20-99	10 37.04	10 33.33	12 16.22	10 30.30	42 25.61
100-499	6 22.22	5 16.67	18 24.32	9 27.27	38 23.17
500 and more	4 14.81	3 10.00	16 21.62	7 21.21	30 18.29
Total	27 16.46	30 18.29	74 45.12	33 20.12	164 100.00
CHI-SQUARE	10.433				

Table 20
Type of On-the-job Training by Year of Graduation

FREQUENCY PERCENT	1982	1985	1989	Total
Formal Training	79 26.60	80 25.32	32 19.51	191 24.58
Supervisor Training	81 27.27	93 29.43	54 32.93	228 29.34
Co-worker Training	137 46.13	143 45.25	78 47.56	358 46.07
Total	297 38.22	316 40.67	164 21.11	777 100.00
CHI-SQUARE	3.553			

Table 20.1
Type of On-the-job Training by Firm Size

FREQUENCY PERCENT	1-19	20-99	100-499	500 or More	Total
Formal Training	44 22.00	36 20.81	41 20.10	68 35.98	189 24.67
Supervisor Training	61 30.50	61 35.26	61 29.90	40 21.16	223 29.11
Co-worker Training	95 47.50	76 43.93	102 50.00	81 42.86	354 46.21
Total	200 26.11	173 22.58	204 26.63	189 24.67	766 100.00
CHI-SQUARE	21.031**				

Note: **=p<.01

Table 20.2
Type of Training by Industrial Sector

FREQUENCY PERCENT	Formal	Supervisor	Co-woker	Total
Manufacturing	21	87	131	239
	12.00	40.09	38.87	32.78
Construction	9	23	42	74
	5.14	10.60	12.46	10.15
Service-banking Insurance,...	30	41	40	111
	17.14	18.89	11.87	15.23
Food Service	21	13	49	83
	12.00	5.99	14.54	11.39
Transportation	11	5	16	32
	6.29	2.30	4.75	4.39
Agriculture	2	7	6	15
	1.14	3.23	1.78	2.06
Health Occupations	36	26	22	84
	20.57	11.98	6.53	11.52
Public Sectors	45	15	31	91
	25.17	6.91	9.20	12.48
Total	175	217	337	729
	24.01	29.77	46.23	100.00
CHI-SQUARE	108.507***			

Note: ***=p<.001

Table 21
Commuting Distance by Year of Graduation

FREQUENCY PERCENT	1982	1985	1989	Total
Less than 5 Miles	125 40.45	118 36.76	74 44.31	317 39.77
6-10 Miles	87 28.16	102 31.78	45 26.95	234 29.36
11-20 Miles	55 17.80	75 23.36	31 18.56	161 20.20
More than 20 Miles	42 13.59	26 8.10	17 10.18	85 10.66
Total	309 38.77	321 40.28	167 20.95	797 100.00
CHI-SQUARE	9.950			

Table 22
Level of Employment by Curriculum Type

FREQUENCY PERCENT	Academic	General	SATS	HSVOC	Total
Owner	3	5	13	5	26
	1.30	3.97	4.53	3.29	3.27
Manager/Supervisor	68	16	27	27	138
	29.57	12.70	9.41	17.76	17.36
General Employee	159	105	247	120	631
	69.13	83.33	86.06	78.95	79.37
Total	230	126	287	152	795
	28.93	15.85	36.10	19.12	100.00
CHI-SQUARE	7.18*				

Note: *=p<.05

Table 23
Level of Employment by Year of Graduation

FREQUENCY PERCENT	1982	1985	1989	Total
Owner	17	9	0	26
	5.45	2.82	0.00	3.27
Manager/Supervisor	73	53	12	138
	23.40	16.61	7.27	17.34
General Employee	222	257	153	632
	71.15	80.56	92.73	79.40
Total	312	319	165	796
	39.20	40.08	20.73	100.00
CHI-SQUARE	32.896***			

Note: ***=p<.001

Table 24
Job Satisfaction by Year of Graduation

FREQUENCY PERCENT	1982	1985	1989	Total
Seeking Employment	76	69	48	193
	24.13	21.43	28.92	24.03
Not Seeking	239	253	118	610
	75.87	78.57	71.08	75.97
Total	315	322	166	803
	39.23	40.10	20.67	100.00
CHI-SQUARE	3.365			

Table 25
ANOVA Summary Table: Mean Weekly Wage by Curriculum Type and Year of Graduation

SOURCE	df	SUM OF SQUARES	MEAN SQUARE	F-VALUE
Curriculum Type	3	220461.667	73487.222	4.64**
Year	2	1719161.337	859580.669	54.28***
Curr Type * Year	6	234123.900	39020.650	2.46*
ERROR	635	10055377.950	15835.241	

Frequency and Mean Weekly Wage by Curriculum Type and Year of Graduation

	Year							
Curriculum Type	1982		1985		1989		LS Mean	
Academic	97	$431.29	84	$367.70	22	$215.94	203	$338.31
General	34	$393.30	36	$303.36	24	$204.43	94	$300.36
SATS	77	$348.35	94	$325.89	65	$231.45	236	$301.90
HSVOC	45	$328.27	44	$271.27	44	$238.72	133	$279.42
LS Mean	253	$375.30	258	$317.05	155	$222.64	666	$305.00

Note: 1. *=p<.05, **=p<.01, ***=p<.001
2. "LS Mean" represent Least-squares estimates of marginal means
3. Use "Type III SS" (refer to "Regression SS" in SPSSX or "Adjusted SS" in MINITAB) to estimate sum of squares and to perform F-test.

Table 25.1
Weekly Wage by Curriculum Type and Post-Secondary Education Attendance

FREQUENCY MEAN WWAGE	Academic	General	SATS	HSVOC	Total
Attended Higher Education	175 $405.32	48 $363.87	61 $318.83	44 $297.29	328 $368.68
Never Attend Higher Education	31 $245.04	53 $247.83	184 $304.84	73 $273.58	341 $283.85
T-VALUE	5.78***	4.07***	0.75	1.10	8.09***

Note: ***=p<.001

Table 25.2
Weekly Wage by Curriculum Type and Post-Secondary Education Attendance: Year of 1982

FREQUENCY MEAN WWAGE	Academic	General	SATS	HSVOC	Total
Attended Higher Education	93 435.27	24 436.46	27 358.95	22 322.77	166 408.12
Never Attend Higher Education	5 305.30	12 274.29	57 339.59	24 327.96	98 326.99
T-VALUE	1.82	2.62**	0.73	0.02	4.36***

Note: **=p<.01, ***=p<.001

Table 26
Regression of the Weekly Earning for the Full-time Working

Variable	DF	Parameter Estimate	Standard Error	T-Value
Intercept	1	270.478	44.536	6.073***
Male	1	55.078	10.040	5.486***
Curriculum				
General	1	-16.691	17.299	-0.965
SATS	1	-3.271	15.937	-0.205
HSVOC	1	-9.539	17.255	-0.553
Marital Status				
Married	1	42.047	10.259	4.098
Separated	1	32.074	26.802	1.197
RURAL	1	-55.464	13.580	-4.084***
PEDUC	1	1.018	1.491	0.683
Type of Higher ED				
Technical	1	-46.689	28.760	-1.623
Community	1	-57.062	22.272	-2.562*
Branch Campus	1	-46.379	56.918	-0.815
Other	1	-58.123	18.970	-3.064**
Higher Education				
Completer	1	114.907	15.892	7.230***
Part-time	1	47.835	31.946	1.497
Drop-out	1	91.451	23.036	3.970***
Training				
Supervisor	1	-30.293	13.231	-2.290*
Co-worker	1	-23.092	12.042	-1.918
Firm Size				
Firm2	1	-5.325	13.794	-0.386
Firm3	1	25.491	13.463	1.893
Firm4	1	60.085	13.440	4.471***
SAMPLE N		683		
F-VALUE		13.499***		
R-SQUARE		0.3003		

Notes:*=p<.05, **=p<.01, ***=p<.001

Curriculum type variable holds the academic as reference group. Marital Status variable employs "single" as the reference group. PEDUC is parent's education, a continuous variable. Type of higher education attended uses the "4 years college or university" as the reference group. Higher education status variable holds those who have never attended post-secondary school as the reference group. Training variable employs formal training group as the reference group. Firm size holds the Firm size 1 (1-19 employees) as reference group.